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LECTURES
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THEORY AND PRACTICE OF MEDICINE;
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&c., &c.

THE NERVOUS SYSTEM.—*Action of Strychnine in paralysis.* CONGENITAL STATES OF THE NERVOUS SYSTEM.—*Complete absence of the nervous centres. Description of anencephalous fœtuses. Explanation of the phenomena observed in them. M. Lallemand's observations.* CONGENITAL DISEASES OF THE NERVOUS SYSTEM.—*Asphyxia and its treatment. Remedies must be directed to the excito-motory nerves. Secondary asphyxia. Encephalitis and tubercular hydrocephalus. Early symptoms. Morbid anatomy. Treatment.*

GENTLEMEN:—Before I proceed to the proper object of the present lecture, I must beg your attention to a fact connected with the *therapeutics* of the excito-motory system. It has been observed that if *strychnine* be given in cases of *paralysis*, the paralytic limbs experience its peculiar effects *before* the healthy limbs. What is the rationale of this phenomenon?

290. It occurred to me that the irritability of the muscular fibre might be greater in the inactive than in the active limb, and that the strychnine acting *equally* through the true spinal system, would produce most marked effects upon the most irritable muscles. But facts were wanting to establish the first fact, viz., that the irritability of the muscles of the paralytic limb was really greater than that of the healthy and active one; for Nysten had only shown that the irritability of a paralytic limb was not impaired—was not less than that of a healthy limb. (*Rech. de Phys.*, page 377). This proof was afforded me by a most interesting case. A little child, aged ten years, was *perfectly* paralytic of the *left* arm. Amongst other remedies, I prescribed galvanism. My young friend, and very intelligent pupil, Mr. Dolman, undertook to apply it. I directed him to apply the *slightest* shock which would produce an obvious effect, and mark in which limb it first occurred. He did so, and uniformly observed that the paralytic limb was agitated by a degree of galvanic energy which produced *no* effect on the healthy limb. Thus my conjecture was proved to be perfectly just. I believe the fact will not be without its interest to physiologists.

291. I must recall to your minds, in connection with this subject, the effects of emotion on the paralytic arm, in the case of hemiplegia (see § 203) and the *contracted* condition of the limb [illegible] affected with paralysis,—the effect of the excito-motory principle of *tone* on muscles of augmented irritability (see § 19, &c., and Memoirs, p. 101, &c.). The contraction of the limbs in persons born with atrophy of the brain, and consequently paralytic, and in cases of old hemiplegia, doubtless depends upon the constant influence of the true spinal marrow, or the principle of tone, on muscles whose irritability is great from want of voluntary actions.

292. I now proceed to the proper subjects of this lecture, viz.:—

THE CONGENITAL STATE OF THE NERVOUS SYSTEM; ASPHYXIA, ITS REMEDIES, &c.

The condition of the fœtus in utero, is that of a merely true-spinal, or excito-motory and ganglionic existence. Nay, in many instances of imperfect formation, not only the cerebral, but the true spinal system, is undeveloped. There is, in fact, no degree in which imperfection of the nervous system may not exist in the fœtus in utero.

293. There may be complete absence both of the spinal marrow and of the encephalon, in which case the fœtus is termed *amyelous*, or *amyelencephalous*. There may be the absence of the encephalon,—of the cerebrum and cerebellum only; in this case the fœtus is designated *anencephalous*. Or the cerebrum merely may be in a state of defective

development, or of *atrophy*, more or less partial or extensive.

294. The amyelous fœtus cannot survive the moment of birth. The anencephalous fœtus may support an extra-uterine life for several hours, displaying the interesting spectacle of the phenomena of the true spinal or excito-motory system, exclusively, in the human subject; but these phenomena gradually cease, or, in other terms, the anencephalous fœtus is not *viable*, the influence of the brain being required, in addition to that of the spinal marrow, for the continuance of life. In the case of atrophy, the fœtus is viable, and may survive for years, but in a more or less idiotic, or paralytic condition; that is, with greater or less defect of the sentient and voluntary functions, according to the degree of atrophy or defect of the encephalon.

I need not adduce any examples of the amyelous *fœtus*, which is always anencephalous too, and generally affected with spina bifida. It affords no illustration of events which occur in extra-uterine life,—or disease.

295. Of the anencephalous fœtus we have most interesting accounts by Mr. Lawrence, M. Lallemand, M. Ollivier, &c.

The description of the phenomena presented in such a case, witnessed and recorded by Mr. Lawrence, is as follows:—"The child moved briskly at first, but remained quiet afterwards, except when the tumour was pressed, which occasioned general convulsions. It breathed naturally, and was not observed to be deficient in warmth, until its powers declined. I regret that from a fear of alarming the mother, no attempt was made to see whether it would take the breast; a little food was given it by the hand. It voided urine twice in the first day, and once a day afterwards; it had three dark-coloured evacuations. The medulla spinalis was continued for about an inch above the foramen magnum, swelling into a small bulb, which formed the soft tumour on the basis of the skull. All the nerves, from the fifth to the ninth, were connected to this." This brief detail is full of interest. The respiration was natural, the medulla oblongata being entire. Swallowing was effected when the food was brought into contact with the pharynx; the sphincters performed their functions; the limbs were moved when the skin was first impressed by the atmospheric air. There was no indication of sensation—the child remained quiet after the first brisk movements, and no event is mentioned which could establish the existence of voluntary motion,—the acts of swallowing, and the expulsion of the urine and fæces, with the functions of the larynx and of the sphincters belonging distinctly to the excito-motory system.

296. The description of an anencephalous fœtus, given by M. Lallemand, is equally interesting:—"Four years ago, I saw at the *Hôtel-Dieu*, an anencephalous fœtus, born at the full period, or nearly so, which lived three days. It cried pretty strongly, exercised the movements of sucking every time that it felt something between its lips; but they were obliged to feed it with milk and sugared water, because no nurse would give it the breast. It moved freely the thoracic and abdominal muscles. When a foreign body was placed in its hands, it bent its fingers as if to seize it; but, in general, all its movements had less energy than those of a fœtus of the same age.

"The cerebrum and cerebellum were entirely wanting; only the medulla oblongata and the tuber annulare remained at the base of the skull, with the origin of the pneumogastric, trifacial, and optic nerves. The whole was covered by the remains of the bones of the skull, of the membranes, and of the skin."

A similar case is detailed by M. Ollivier, who remarks:—"I observed an anencephalous infant two hours after its birth. The eyes were constantly shut; its cries, which were frequent, were easily quieted by introducing the finger into its mouth; it then exercised repeated sucking movements; it moved its limbs with tolerable strength, and pressed between its fingers any substance placed in its hands.

"I again saw it at the end of three hours. The feet and hands were become purple and cold, the respiration was less frequent; the movements of the spinal marrow, which I had at first remarked, still continued to take place, and followed each of the deep and long inspirations which it made. The cries were less strong and less frequent; they gave it, at intervals, small spoonfuls of old sweet wine.

"Insensibly the coldness of the extremities reached the limbs and the body; respiration continued at longer intervals; it became convulsive. This state continued for six or eight hours; its cries became more feeble and less frequent, like the respiratory movements, which were accompanied with general convulsions, and it died perfectly asphyxiated, after having uttered a cry analogous to that which results from hiccough."

M. Ollivier adds:—"In this case there did not exist a single rudiment of the encephalon and of the prolongations of the medulla oblongata; the spinal marrow alone was perfect, and yet this infant performed repeated movements of suction, and forcibly squeezed substances placed in its hand; these movements were far from being automatic, like those which agitated the inferior limbs."

297. These cases, in connection with the preceding one are full of interest. The peculiar cries which resemble, in their rationale, the croup-like convulsion from dentition; the closed state of the eyelids; the

action of suction excited by the contact of the finger; the closure of the fingers excited by objects placed in the palm of the hand, and the movements of the inferior extremities, in this acephalous infant, are phenomena of the excito-motory system, of the most deeply interesting character.

298. The following facts are extracted from a letter addressed by Mr. Sweatman to Sir Charles Bell, and published in the "Nervous System." In a case of parturition, "after the membranes had given way, and the liquor amnii had escaped, the midwife, on examining, found another membranous bag presenting, which she naturally supposed belonged to a second child, and therefore did not interfere. During the passage of the bag under the os pubis, it suddenly burst, and the whole of the brain escaped from the opening, very much smashed, and hanging together only by its membranes. The child breathed with perfect freedom, and cried strongly, rolling its eyes about in a wild staring manner. It moved its lower extremities freely, and that not from spasm, but obviously in obedience to external impressions. There was no motion whatever of the upper extremities.

"In this state it remained for about three hours, when all motion in the extremities ceased, the eyes became fixed, and the breath gradually slower, till it ceased altogether, just seven hours after the birth of the child. During this time neither urine nor meconium passed, nor had there been any hæmorrhage from the vessels of the brain.

"On examination, the occipital bone and the posterior part of several of the cervical vertebræ were found wanting, and their place had been occupied by fluid surrounded by a membranous bag: an instance of spina bifida of the neck. The spinal marrow was perfect.

"A somewhat similar case occurred to me about three years ago, when I had occasion, from peculiar circumstances, to remove the brain of a child through the anterior fontanelle. In that instance about ten minutes elapsed before its birth, yet it drew a deep inspiration, and would have cried had it not been prevented; and the motions of the *lower* extremities continued about half an hour, although the whole of the brain had been removed, and a blunt instrument repeatedly thrust down the foramen magnum."

299. Such are a few of the facts which prove the presence of a system of excito-motory functions attached to the medulla spinalis, and existing independently of the brain, in the human subject. The excited acts of suction on stimulating the lips; of deglutition, on stimulating the pharynx; of the closure of the hand, on stimulating the palm; of the lower extremities, "*obviously in obedience to external impressions*," are all phenomena of the deepest interest, as illustrations of this system.

M. Lallemand, who has attended most to this subject, still considers these motions to arise from *sensation*, and yet, singularly enough, considers the *volition* as suspended.

300. It is impossible to conceive a greater confusion of all ideas on this physiological question, than is presented in the following paragraph, which I quote from this author, and several parts of which I mark with particular emphasis: — "The instinctive automatic movements produced directly by sensations, without the medium of reflexion, or of volition, are observed at all periods of life; during sleep they preside over respiration, replace the deranged bed-clothes, push aside those which are too warm; shrink from a puncture, tickling, or external pressure, or change the position; (!) *the whole* without the least consciousness on the part of the brain." (!) I could not adduce a more lively proof of the necessity of reconsideration of this subject.

301. What are the movements produced immediately by sensation? There can be no such thing. How can sensation act in inducing motion, except through the medium of volition? It is impossible. And who can confound the *excited* motions of respiration, with the *voluntary* act of replacing a coverlet?

302. There is another remark of M. Lallemand, of which I am compelled to say that it is equally unfounded:—"This immediate influence of the spinal marrow on the nerves which go to it and from it, becomes gradually weaker as that of the brain diminishes, but it never disappears altogether." The truth is, that the intellectual functions are daily developed during the first years of life, and *obscure* those of the excito-motory; but the latter are not *enfeebled* during this change, which is one of *superaddition*, not of *substitution*.

303. The account of the phenomena presented by the anencephalous infant, during the few hours of its extra-uterine life, drawn up by one well imbued with the distinction of the functions of the cerebral, or sentient and voluntary, and the true spinal, excito-motory systems, would possess the deepest interest to the physiologist and pathologist.

304. In the cases of atrophy of the cerebrum, sensation, intellect, and voluntary motion, are *superadded* according to the degree of development of the brain. But, in general, there are *sensibility*, *idiocy*, and *paralysis*; and, as the cerebrum is frequently more atrophied on one side than the other, there is usually some *hemiplegic* lameness of the opposite side of the body. There are frequently epileptic attacks, or contractions of the limbs.

305. M. Lallemand observes, that when the superior and inferior extremities are un-

equally affected, the former are always more paralysed or contracted than the latter; and that, whenever the paralysis is not complete, the sensibility is less affected than the movements.

306. Upon this last point I find it necessary, however, to recur to the want of distinction on M. Lallemand's part, between the movements which result from sensation and volition, and those which belong to the excito-motory system; I shall, at the same time, again point out the absolute necessity for attention to this distinction. M. Lallemand observes:—"It is not rational to expect, as has been done, in a given part of the encephalon, one organ for the perception of sensations, and another for the determination of voluntary movements." —"This question is decided by the examples which I have just quoted of fœtuses deprived of cerebellum, which nevertheless experienced distinct sensations, and reacted upon these sensations in a manner sufficiently regular to grasp a body placed in the hand, to seize the breast of its mother with its lips, and to exercise the action of suction and deglutition."

307. It is plain, from this quotation, that the want of the distinction on which I am insisting must prove a continual barrier to the progress of physiology, and consequently of pathology.

308. The sensibility must be studied in the senses of smell, sight, hearing, taste, and touch, distinguishing this last carefully from excitation. The intellect must be studied in the physiognomy, the gestures, the voice, and articulation, in the alternations of sleep and waking; in the susceptibility of attention to bright objects, toys, amusements, &c.; the voluntary movements in examples unequivocally distinct from the excito-motory phenomena.

309. In every case of a viable infant I suppose the excito-motory functions will be complete.

The external ganglionic subdivision of the nervous system must be carefully examined in every instance of *partial development*, as of an organ, a limb, &c.

310. I shall close these remarks by a few observations upon *congenital* diseases of the nervous system. They may be divided into those which take place *in utero*, and those which are induced *inter partum*.

311. The former are, principally, defective development, or atrophy, or destruction of the encephalon or spinal marrow; hydrocephalus and hydrorachitis, or spina bifida.

The latter are apoplexy and asphyxia.

Of the former class I shall not say more at this moment.

Of the whole number of *still-born* children at the *Maternité* of Paris, M. Cruveilhier says that one-third are affected with *apoplexy*. The *cause* of this affection is most probably the violence inflicted during severe labour. The *form* is *meningeal*; that is, diffused coagula of blood are found between the membranes, especially at the posterior part of the encephalon, and in the ventricles, without rupture of the *substance* of the brain. The symptoms are not to be distinguished from those of feebleness and asphyxia; some infants have lived with these symptoms for one, two, three, or four days; and some may even have recovered altogether. The *prevention* obviously consists in cautiously accelerated delivery; the *treatment* cannot, until the diagnosis is made evident, be distinguished from that of asphyxia.

312. To *asphyxia* I will now draw your attention in a particular manner. *Its* prevention and treatment are constantly points of the utmost anxiety to us.

313. The infant is said to be *still-born*. You wait for the establishment of respiration, and this event does not take place. There is a general alarm. You will now, for the first time, see the value and importance, in a *practical* point of view of the principles of the physiology and pathology of the nervous system which I have been teaching you. I have told you that *respiration* is an *excited* function; that it belongs to the excito-motory subdivision.

314. In one word, then, all our efforts must be instantly made to *excite* respiration. Now, what are the channels through which this act may be excited? What are the excitors of respiration? The *fifth*, the *pneumogastric*, and the *spinal* nerves.

315. The *fifth* pair of nerves must be excited by *forcibly* blowing, or dashing cold water on the face,—by stimulating the nostrils by ammonia, snuff, pepper, or the point of a needle.

316. The *spinal* nerves must be excited by *forcibly* dashing cold water on the thorax, the thighs; by tickling, or stimulating the sides, the soles of the feet, the verge of the anus.

317. What the pneumogastric is, as the excitory nerve of respiration, under ordinary circumstances, the fifth and the spinal nerves are, in cases of asphyxia, or suspended respiration. The means recommended for exciting respiration through these excitors frequently induce a sudden act of inspiration, which proves the first series, so essential to animal life.

318. But if these attempts to *excite* respiration through the fifth and spinal nerves fail, we must *imitate* this function, by artificially distending the lungs, in the hope that, eventually, it may be excited through its wonted channel, the *pneumogastric*.

319. To effect this, the practitioner's lips are to be applied to those of the infant, interposing a fold of linen, and he is to propel

the air from his own chest, slowly and gradually into that of the infant, closing its nostrils, and gently pressing the trachea on the œsophagus. The chest is then to be pressed, to induce a full expiration, and allowed to expand, so as, if possible, to effect a degree of inspiration.

320. But it is important, in doing this, that the practitioner himself should previously make *several deep* and rapid respirations, and, finally, a full inspiration. In this manner the air expelled from his lungs into those of the little patient, will contain more oxygen, and less carbonic acid, and consequently be more capable of exciting the dying embers of life.

321. I base this suggestion on an interesting communication by Dr. Faraday, in the "London and Edinburgh Philosophical Magazine," vol. iii., p. 241, for October, 1833, to which I have already referred. It is ascertained that respiration may be suspended longer, as in diving, or in experiments, after such repeated forced respirations, than in ordinary circumstances, from the greater purity of the air in the lungs.

322. If all these plans should be tried in vain, I would strongly advise galvanic or electric shocks, to be passed from the side of the neck to the pit of the stomach, or in the course of any of the *motor respiratory* nerves, and their appropriate muscles. No time should be lost in sending for a proper apparatus; but, should the lapse of an hour, or even more, take place before it *can* be obtained, still it should be sent for and tried.

323. When respiration is established, the *face* must *still* be freely exposed to the air, whilst the temperature of the limbs and body is carefully sustained.

324. In the *midst* of these efforts it should, in the next place, be the office of two other individuals, to maintain or restore the *temperature* of the little infant, by gently but constantly pressing and rubbing its limbs between their warm hands, passing them upwards, in the direction of the venous circulation.

An enema of gruel, at 98°, or 100°, or *higher*, with a little brandy, should be administered.

325. As soon as possible a little warm liquid, as barley-water, at blood-heat, should be given by means of the proper bottle, furnished with leather, or soft parchment. A teaspoon must not be used for fear of choking. If the infant draws the liquid through its own lips, by its own efforts, there is no danger.

326. Lastly, these various means should be continued or repeated in the most persevering manner.

When an infant has been restored from a state of asphyxia; it frequently relapses into a *secondary asphyxia*, and is lost.

327. This is a general fact in regard to asphyxia. I put a bird and a mouse into the same bell-glass, inverted over water. First, the bird, and eventually the mouse, began to gasp. I put them into their respective cages. The bird was dead the next day, and the mouse on the succeeding day.

328. Sir Humphrey Davy experienced a secondary attack after breathing hydro-carbonate. A corporal of the Guards, upon being apparently restored from asphyxia from submersion, was affected with convulsions, and expired.

In a case of asphyxia from laryngitis, after the patient had ceased to breathe, the trachea was opened, artificial respiration was performed, and re-animation took place, but the patient expired shortly afterwards.

329. These facts should keep us upon our guard against secondary asphyxia; we should watch our patient, and be prepared with all our remedies; we should dash cold water on the face occasionally, and expose the face of the patient to the cool, free, open air; and we should enjoin, in an adult, frequent, full respirations.

330. How interesting would be a series of well-conducted *experiments* upon young animals, with the view of ascertaining, by comparative trials, the degree of efficacy of the various remedies for *asphyxia*. I have sometimes thought that, if one wire of the galvanic apparatus were properly inserted into the nostril, and the other within the sphincter ani, the shock might have great efficacy.

331. I cannot conclude the subject of congenital diseases of the nervous system, better than by giving the following interesting case, already noticed, for which I am indebted to Mr. Herbert Evans:—

"On the 2nd November, 1832, I attended, in labour, the wife of a poor man, who was a plumber, and who, for some time, had been the subject of epileptic attacks. The mother was diminutive and weakly. Whilst the nurse was washing the child, I observed that there was a tumour on the loins, about the size and form of half a French walnut; on examining it, this was found evidently to arise from hydro-rachitis. In a short time the tumour lost its shrivelled state, and became distended into a semi-round bag. The child being pretty strong, I resolved to treat the disease by pressure; when, on compressing it slightly, previously to applying a bandage, I was surprised to find that such pressure was immediately followed by the affection described by Dr J. Clarke. Whenever the pressure was applied, a similar effect resulted, and the nurse was obliged to be very careful in laying the child down, not to allow the swelling to bear any part of the weight of the body; if she did, the severity of the spasm was such as to threaten suffocation.

"The tumour became daily more prominent, and its sides thinner, until, after about two months, it appeared as if it would give way. It seemed better now to evacuate the fluid gradually, rather than allow it to burst; accordingly, a small opening was made with a needle, and the fluid, which was limpid, oozed out constantly, without any apparent effect. The child lived until the end of February, when it sank, without any definite complaint.

"The examination of the body presented nothing deserving of attention.

"The name, *chronic croup*, given by some authors, is surely most unfortunate; it is often by no means chronic, and has no relation whatever to croup. It is evidently a convulsion of the respiratory muscles, and in many respects seems to have an analogy with hooping-cough; for instance, the similarity of the hoop, and the tendency of both to pass into general convulsions, death, &c. The above case seems to throw some light upon its nature, inasmuch as it proves that pressure upon the nervous centres (perhaps the medulla oblongata) may, under certain circumstances, produce it."—Dec. 15, 1834.

332. I now proceed to treat of several of the diseases of the nervous system in infants, and first

Of Encephalitis and Tuberculous Hydrocephalus.

I shall have occasion again to draw your attention to my subdivision of the nervous system, into the sentient and voluntary, the excito-motory, and the ganglionic; for the diseases of which I am about to treat, *begin* in the first, and *proceed* to involve the second, and the last *in their course*.

You will now perceive the intrinsic and *practical* importance of these divisions.

I must proceed to state, that the *cerebral* diseases of infants may be divided into—

1. *Encephalitis.*
2. *Tuberculous Hydrocephalus.*
3. *Hydrocephaloid Diseases.*
   - *a. From Intestinal Disorder.*
   - *b. From Exhaustion.*

Encephalitis is only to be distinguished from the tuberculous hydrocephalus:—1. By our being able to trace it to some external cause, as a *fall*, or *blow*, too frequently concealed by the nurse at the time of its occurrence. 2. By ascertaining the *absence* of hereditary *predisposition*. 3. By its acuter symptoms, course, &c.

Important as the distinction is, therefore, in reference both to the prognosis and treatment, I am compelled to combine the description of these two diseases, pressing upon you the absolute necessity of a strict inquiry into the two points which I have just mentioned.

333. The *earliest* symptoms of encephalitis and of tuberculous hydrocephalus are, then, those which relate to the *cerebral* functions, which are *exalted*. These functions are so slightly developed in infants, that their state of exaltation too frequently passes unnoticed. Yet the phenomena are obvious enough, if there be but a careful observation on the part of the parent, or nurse, on whom the duty of noticing the *dawn* of these diseases must devolve.

334. The *first* symptom is an unhappy countenance and manner, a general expression of pain, of suffering, or, at least, of uneasiness; the brows are contracted on exposure to light, on being moved or disturbed; the temper is fretful in the same circumstances; the head is, perhaps, moved to and fro continually. The infant is only quiet when left in a state of undisturbed repose. Sometimes there is a perpetual moaning, or whining, sometimes a piercing cry.

335. In the *next* place I must mention the state of *the sleep*. This is broken; and although the little patient is only quiet when let alone during the day, yet its nights are disturbed by restlessness, or starting and crying. There is in the midst of all this a peculiar stupor.

336. There is intolerance of light and of sound. The eyelids are forcibly closed, the pupils contracted, on approaching the window, or a bright light; any sudden noise induces starting, alarm, crying, &c. The skin is, also, frequently very sensitive to the contact of the fingers of the medical practitioner, as we ascertain on feeling the pulse, &c.

337. It is in vain to speak of *delirium*, for how is this to be manifested in an infant? However, restlessness takes its place, and constitutes an important symptom; and frequently a deceitful sardonic smile plays upon the countenance, or an expression of fear, or fright, is written there.

338. Unfortunately these symptoms, although observable enough, usually meet with some hypothesis in the minds of the parent and nurse, and are referred to the stomach and bowels, &c., &c., and much valuable time is usually lost.

339. To the observant physician they speak another language. A contracted brow and a contracted pupil, with want of sleep at night, and want of quiet in the day, must never be overlooked.

340. Such are the true *cerebral* symptoms; but these are frequently allowed to proceed until some far more formidable symptom, belonging to the *excito-motory* system, supervenes. The *most frequent*, and the least formidable in appearance, amongst this second series of symptoms, is *vomiting*. Never, never, allow vomiting in an infant to pass without paying the utmost attention, and making the strictest inquiry, in reference to the functions of the brain. It is

frequently the *first* symptom *noticed* of encephalitis, or hydrocephalus.

341. The next symptom belonging to the excito-motory division of the nervous system is *strabismus*, a *contracted* state of the muscles of the *thumb* or *fingers*, or some unequivocal *spasmodic* or *convulsive* affection of the *respiratory* muscles, or of the muscles of the *limbs*. No one *can* see the least of these things without the most extreme alarm.

342. These symptoms, from being apparently slight and transitory, become continuous and severe; the eye is affected with strabismus, or is turned obliquely upwards, by the *tonic* action of the abducens, or the pathetic; or there is a rocking, or rotatory motion of the eye, by the clonic action of the same nerves and muscles; the thumb is drawn spasmodically into the palm of the hand, and the fingers are closed over it; the toes are contracted towards the sole of the foot, and the arms are frequently affected with rigidity. There are *fits*, with spasmodic croupy inspirations, from contraction of the glottis and action of the muscles of inspiration, or there are general *convulsions*.

343. The bowels are obstinately constipated.

These two series of cerebral and true spinal symptoms mark two distinct degrees of violence of this terrible malady.

344. The third stage is denoted by coma, and its concomitant diminution of the faculties of the sentient and voluntary system, and eventually of the powers of the excito-motory system.

345. There are blindness, deafness, deep stupor, the absence of voluntary motions. At the first, the eyelids are constantly half-closed, but *still* close completely on touching the eyelash; afterwards this excito-motory phenomenon ceases; the respiration becomes irregular, alternately *suspended*, *sighing*, and, at length, stertorous; the sphincters lose their power, and the fæces and urine are passed unconsciously.

346. The countenance is, alternately, slightly pale and slightly flushed at the first; afterwards it is pale and emaciated.

The general surface is, like the countenance, cool, shrunk, and emaciated, in the later periods of the disease.

347. The pulse, which is slow at the first, becomes gradually more and more frequent and feeble, until, towards the close of the disease, it is counted with difficulty.

The tongue is white and loaded. The secretions are morbid; the alvine evacuations dark-coloured and fœtid.

348. How interesting and valuable would a series of cases be taken in the rigid spirit of truth, and of the divisions of the nervous system into the cerebral, the true spinal, and ganglionic.

349. The morbid anatomy of encephalitis consists in the effusion of serum and of lymph under the arachnoid, and of serum into the ventricles, and in softening of some part of the cerebral mass. Of the latter change I saw an interesting case a short time ago in a child of two years of age.

350. The morbid anatomy of tuberculous hydrocephalus consists of the effusion of serum into the ventricles, and under the arachnoid at the summit, but especially at the base of the brain. M. Rufz has recently called the attention of the profession to peculiar, white, semi-transparent granulations, formed in the arachnoid, especially at the base of the brain. Tubercles occurred in the cerebrum or cerebellum in thirteen cases out of twenty-seven, in which these granulations were observed by M. Rufz. The spinal marrow and its membranes examined in twelve cases were found free from morbid change.

351. The connection between hydrocephalus and strumous affections has long been noticed. M. Rufz, in his interesting Thesis, states, that tubercles of the lungs occurred in *every* case examined after their frequent coincidence with hydrocephalus had been distinctly ascertained. Granulations were observed in other organs, the lungs, the pleura, the peritoneum, the liver, the kidneys.

352. The treatment of encephalitis and of hydrocephalus, in the *early* stage, and especially of encephalitis, must be energetically antiphlogistic.

353. Bloodletting, general and local, must be adopted in its fullest measure. The child should be placed in the perfectly erect position, and the jugular vein should be opened, and the blood be allowed to flow until the lips turn pale; afterwards, venesection, cupping, or leeches, should be employed and repeated, according to the age and strength of the little patient, and the period and violence of the disease.

354. The bowels should be freely purged. The system should be brought under the influence of mercury as promptly as possible, by means of calomel, or the hydrargyrum cum creta, and the unguentum hydrargyri.

355. The head should be kept high, and bathed with a spirit lotion, or covered with a bladder, partly filled with pounded ice. The feet should be fomented with hot water frequently, and kept warm. The diet should consist of barley-water. Every source of excitement or of disturbance should be carefully removed.

356. Later in the disease counter-irritation by blisters applied to the head, or the neck, mercury, a more nutritious diet, and continued fomentations of the feet, may be tried.

357. I must not dismiss the subject of encephalitis and of hydrocephalus without reminding you of the comatose and convulsive affections which occasionally supervene on acute anasarca, especially that which follows scarlatina in children. The most

prompt and energetic use of the lancet is the only remedy in this case.

In my next lecture I shall proceed to treat of *two* of the most important and most interesting cases of *infantile* disease: the first is the *hydrocephaloid* disease; the second, the *croup-like* disease. Both are *terrific* in appearance, and in reality if mistreated; but both are safely curable if understood, and if treated by proper remedies. I believe that both have been first clearly illustrated by my own researches.

In every step we take in reference to hydrocephalus, and the hydrocephaloid and the croup-like diseases, we have continually to advert to the distinctions into the cerebral and true spinal systems. It is impossible otherwise to *interpret* the symptoms.

In concluding this lecture, I beg to call your attention to one of the most valuable Essays upon Hydrocephalus hitherto published. It will be found in THE LANCET for 1835-6, vol. ii., p. 232 It is written by the pen of Dr. Green, and in the spirit of the most accurate physician of the age, M. Louis.

LECTURES
ON
MATERIA MEDICA AND THERAPEUTICS;

NOW IN COURSE OF DELIVERY
AT THE
WINDMILL-STREET SCHOOL OF MEDICINE.
BY
GEORGE G. SIGMOND, M.D.

SARZA, OR SARSAPARILLA.

SARSAPARILLA.—*Its efficacy in certain diseases of the skin. General principles of treatment in skin diseases. Uncertainty and changing character of skin eruptions. Therapeutic effects of sarza. Elm bark and the solanum dulcamara.* LEAD.—*History of the metal. Preparations in use. Action of water on lead. Sir G. Baker's investigations.*

GENTLEMEN:

I FEEL it incumbent on me again to address you on the very important drug which for the last two days has been the subject of my consideration, because I am not aware of any writings to which I could particularly refer you for practical information, nor do any clinical lectures with which I am acquainted point out to you the different cutaneous diseases in which sarza is observed to be successful, and those in which it is usually injurious. Our knowledge of the treatment of the diseases of the skin would appear to be very limited, if the general authorities on these affections were consulted. The most popular of our writers have attempted to draw nice definitions, and to exhibit discrimination in the distinctions of the varieties of the affections of the skin, but have given us only meagre practical information. The premature death of Dr. Wallace has deprived the profession of a zealous investigator into the physiology of the skin, who has led the way to a more thorough acquaintance with facts than we before possessed. His place will, however, I hope, be supplied by Mr. Judd, to whom we are indebted for some valuable observations on the dermoid coverings, and more particularly as connected with some of those eruptions for which sarza is so celebrated. His proofs that the external cuticle is not a mere unorganised secretion from the rete mucosum, but that it is liable to chronic inflammation, as in acne rosacea, are well worthy remark; and I have to thank him for the microscopic views which have enabled me to come to decided conclusions upon many points of very deep interest. However fine may be the distinctions of nosologists upon cutaneous disease, I would have you bear in mind that in many constitutions there will be existing at the same moment in various parts of the skin, papulæ or pimples, vesiculæ or vesicles containing lymph, pustulæ or tumours containing purulent matter, and that all these are alike produced by the same circulating fluid, or are attempts to excrete from the system something which would contaminate the tissues, or render the organs incapable of healthily performing their functions. The great object in applying your remedies is to discover whether, from the mass of blood, the excretion is best performed by the skin, by the lungs, by the kidneys, or by the great excrementitious canal, for from all these organs it is evident there is constantly thrown off that which is injurious, and which cannot be admitted to form part of the human organisation. In some individuals the skin is called into immediate action; the slightest deviation from the due function of the stomach produces redness, heat, and vesication; in others, a crop of papulæ; and in others, again, vesicles; and this sometimes occurs with extraordinary rapidity, a few hours being sufficient, nay, sometimes a single hour, to cause blotches of red, or elevation of the skin. Many individuals have scarcely taken a meal in which some portion of fish has been swallowed, before this effect has been observed, and this is generally ascribed to some peculiar idiosyncrasy: some vegetable substances, or the acids, will in others cause the same circumstances to arise. These results are sometimes so quick that it is almost impossible to believe that imbibition of the noxious agent has taken place, and that it can have traversed the circulation, and have been deposited in any of the numerous small glandular projecting bodies commonly called papillæ, but which Mr. Judd believes to be small granular glands, secreting albu-

minous fluid for the formation and regeneration of the rete mucosum; yet the extraordinary appearance of the cutis presented during the excitement of an eruption, gives us reason to believe such to be the case. If the mass of blood require to be gradually relieved from the impurities which it determines to the skin, I am persuaded that sarsaparilla, given with perseverance, with strict attention to diet, will effect more good than any medicine with which we are acquainted, and will leave none of those prejudicial consequences which the active minerals are uniformly observed to do; and when the skin has for some time been made the channel by which Nature excretes, you will find that so far from benefitting your patient by directing this excretion to other channels, you will do great mischief; and if you do not aggravate or alter the character of the skin disease, you will have some greater enemy to contend with. Thus purgative medicines, and the favourite mineral waters of Cheltenham, and of Harrowgate, which are so often prescribed for long standing cutaneous disorders, frequently leave the patient in a debilitated state, and in exchange for a papular or a vesicular eruption, produce a squamous state. In the early commencement of these diseases purgatives are the great sources of relief; then it is that you have it in your power to determine to the bowels, or to the kidneys; but when the time has ceased for this condition, you must look to other means of cure; when a chronic state occurs, when it has lasted for some time, when your patience has been almost exhausted, if you have been led to try other remedies, you will turn with satisfaction to yourselves to sarsaparilla; and there are likewise other plants which yield their virtues to your hands, which, when this fails, will be most successful. Amongst these my own experience has directed me to elm bark, and to the solanum dulcamara, or the bitter-sweet.

Medical men have very seldom a fair trial of their skill given them in these long-lasting diseases of the skin; patients soon get wearied of the perseverance demanded, and of the diet to be attended to, without which no cure can by possibility be effected. Every physician, I should think, in London, has constantly opportunities of seeing skin diseases brought before him, for which he is requested to write; and he fully knows that opinions have been obtained elsewhere, that the individual has tried, over and over again, mercury, sarsaparilla, colchicum, creosote, and sometimes prussic acid, but that there has been no steady adherence to any plan, and that he will only be classed amongst those "who have done nothing for me;" yet he knows that by gentle treatment, that is, the avoidance of all mineral medicine, by the use of the sarza, or some of its best substitutes, by the strictest attention to diet, he can in due time effect a permanent cure. The original character of an eruption is much sooner changed by medicine than is generally believed; that which began by the least elevation of a papilla, or a very slight effusion of lymph, may become, more especially if mercury be injudiciously administered, a complex disease which involves the whole of the dermoid coverings, each of which has it own peculiar morbid derangement. Some very high authorities in this country and in France, have divided all the diseases of the skin into those which are inflammatory, and those which are not; if by simple redness is meant inflammation, this distinction may hold good; but I cannot think the mere injection of the capillary vessels with blood, and its detention there, can come under this designation; and some of the cutaneous affections are evidently injections of the glands of the skin, induration, and elevation; and if the means generally employed to reduce inflammation be had recourse to, the worst possible effects are oftentimes visible. It is true that in looking into the periodical literature of the day, you will find cases mentioned as cured by depletion, and you will find some clinical lectures upon these cases, but these are given in so loose a form, and in so unsatisfactory a manner, that no inferences can be drawn from them; you will scarcely ever find the date of admission given, the length of time in which the cure has been effected, or any of those data which enable any but the immediate student of the hospital to follow the preceptor. It is, indeed, that which has given so poor a character to the clinical instruction of the metropolis, and that has so frequently caused observations to be made as to its inferiority to the schools of Edinburgh, and of the Continent; from all I have learnt it is, in many institutions, very valuable to the pupil, to whom every attention is very properly paid, but to the reader and to the profession, the clinical lectures, generally speaking, must prove very unsatisfactory, that do not enter into the minutest details, and in which every occurrence is not duly noticed.

How often do we find eruptions which commence with a mere patch of erythema, by injudicious treatment, degenerate into papulæ, then into vesicles, and, at last, pustules; such an endless variety being exhibited during the continuance of the affection, as to render all attempts at diagnosis in the immediate metamorphosis quite out of the question. Mr. Judd has well explained this:—"If I wished (he says) to define Nature's method of producing the puniceous patch of mottled skin, the papulæ of lichen, the vesicle of rupia, or the pustule of ecthyma, I would take a simile, the blushes arising by simple friction upon the skin, and compare them with the irritation produced by animal poisons. And what, let

me ask, would be the effect of the farmer's labourer lacing his boot too tight, or the soldier blistering his foot by the march? Why a small degree of friction from either cause would produce redness or erythema; and, if carried a degree or two farther, it would, by inflammatory action, occasion lymph to be thrown out, and generate a blister, or vesicle; and a degree of friction, a little beyond this, would lead to the formation of pus, and make the latter a pustule, and thus all the intermediate stages will have been gone through, from the erythema, or puniceous patch, to the throwing out of clear lymph, as in the vesicle, or to the secretion so produced becoming opaque lymph, or genuine pus, as in ecthyma; these are but similar changes to those we observe in the vaccine vesicle, or in a vesicle that becomes a pustule by the mere friction of the clothes."

When a slight action has once commenced by the skin, it should immediately be treated with great attention—the strictest attention as to diet and cleanliness, for in cachetic habits you never can know what form the disease may assume; and, if it be connected with a virus either animal, vegetable, or mineral, it may become inveterate; inoculation through the skin may produce more frequently mischief when there is inattention than you may be aware of; many trades, many occupations, such as the grocer's, the washerwoman's, expose those who follow them to various eruptions, which do not always wear the same form, and which only occur where circumstances predispose them to the infection. How necessary it is to be careful what medicine you employ, you may judge, from the circumstance that even in a general healthy state some drugs will cause severe eruptions, and when there is the slightest disorder they will affect still more strikingly; thus, balsam of copaiba will, in many individuals, produce eruptions, but when the urethra is inflamed, so as to demand its use, a crop of pustules will often supervene. Mercury is, oftentimes, the cause of the greater number of those eruptions which are ascribed to syphilis, from the delicate pink-coloured patch, which forms more than one-third of these cutaneous affections, to the worst and more uncommon forms of squamous eruptions, and of tubercles; yet they yield to constant employment of sarsaparilla, either in its form of compound decoction of the liquor of sarsaparilla, or any well made preparation. I have seen cases of the utmost disfigurement, and of loathsomeness, of misery, of suffering, and of exhausted constitution, restored to clearness, to plumpness, to ease, and to health and vigour, where desperation has almost seized the victim, and this has been owing to judicious and unremitting perseverance in the employment of sarza.

The first ordinary symptoms of improvement after taking sarsaparilla, is evinced by the kidneys taking on an increased action, and the urinary fluid depositing a greater quantity of albuminous matter. Of the mutual dependance of the skin and the kidneys upon each other, and the manner in which the one relieves the other, I need hardly, in these days of sound physiological knowledge, say much; but, if you wish both instruction and amusement in the consideration of the subject, let me advise you to read one of those practical, useful, yet jocose lectures, which that enlightened man, Abernethy, delivered; you will find it in THE LANCET for the year 1826. It is very instructive, and you will learn how much the secretions are vicarious to one another. In the exanthematous diseases, sarsaparilla is quite useless, these run a regular, defined course, and the only duty of the medical man is to watch their progress, and obviate any bad symptom that may present itself, always remembering to avoid a meddlesome interference with the rules laid down by Nature herself. In the papulous diseases, taking the three affections called strophulus, lichen, and prurigo as the genera, when they first occur, common attention to the digestive organs will be sufficient to remove them; but they generally occur as symptomatic of some disease which demands your attention, and sarsaparilla is only occasionally required. In the squamous diseases it is very valuable. Lepra, psoriasis, and ptyriasis, in their worst forms, very often yield to this in preference to any other remedy. The bullæ, including under this head, erysipelas, pemphigus, and pompholyx, are rarely benefitted by it. In the pustulæ of a chronic order, I believe it to be the most decidedly useful of all our agents. I have known the most inveterate cases of impetigo, of porrigo, and of ecthyma, their different species and varieties, treated with much greater success by it than by any thing with which I am acquainted; and in the greater number of instances I believe metallic remedies would have been highly injurious. The most complicated forms of these diseases demand the most scrupulous attention to diet, and to the taking large quantities of sarza. The vesiculæ, such as herpes, rupia, eczema, too, are to be cured by it; lupus and acne, amongst the tubercula, are allevinated by it. Where any of these accompany other diseases, sarza will prove beneficial as a general tonic, and, oftentimes, assist the action of other remedies. In those eruptive diseases, which often occur where leucorrhœa is present, to a very considerable extent, you will oftentimes produce a quick change in the state of the mucous membranes.

You will not unfrequently observe that these affections are concomitant, and it is not at all unusual to know that very young females who have been prematurely

subjected to disordered states of the mucous membrane of the vagina, from some irritation (and you should be aware that this occurs, occasionally, in very early life, even before the appearance of puberty), are very liable, as life advances, to have eruptions, especially on the face, which sometimes are exceedingly difficult of cure, but which will yield to sarsaparilla, to elm bark, but which will be aggravated by injudicious treatment. This state requires great perseverance in the means of cure; the most exemplary diet; abstinence from stimulus of the most common kind; for even the smallest quantity of salt used in culinary purposes, has been known to produce again irritation. I have observed to you, that the vegetable kingdom acts much more decidedly in the spring than in the autumn, and this is certainly the case with sarza; for, without having any pretensions to periodicity in its action, it is always found to be more efficacious during the spring; whether this may arise from other causes, or not, I cannot take upon myself to say.

When sarza does not exert its energy upon the kidneys, it usually acts upon the skin and produces very copious perspiration; at first, however, only gently increasing the insensible exhalation, it very rarely acts upon both organs at the same time; if the skin be in a very atonic state, the perspiration will only be increased in particular parts, and only where the sebaceous glands are of a large and more apparent texture. Thus, under the arms there will be very striking increase of moisture, whilst the other parts of the surface will be dry and scaly. Occasionally considerable fetor has been attendant on the sweats; but this seems rather to have been the case where mercurial salts have been previously taken. The new skin that is produced, where the original cuticle has been destroyed by disease, under the action of sarsaparilla, becomes generally much thicker. This, however, is a subject which, with the physiology of the skin, yet requires much elucidation; it seldom happens under ordinary circumstances, when the cuticle has been removed, and a denuded surface left, that the new formation resembles the old. If it be desirable to produce perspiration the patient should be confined to bed; and the Spaniards generally recommend that under a course of sarsaparilla, every effort should be made to obtain its diaphoretic effect. This property of producing perspiration has led to the administration of this root in chronic rheumatism, but I think with very little good effect. I have long been in the habit of using sarsaparilla; and have, in compliance with one of the views with which the *Medico-Botanical Society* was founded, attempted, amongst our indigenous plants, to obtain a substitute for it; and as it is so expensive, I have sometimes felt justified in following, in hospital and dispensary practice, the recommendations of some physicians, and have employed those that have had some reputation; and after some attention devoted to skin diseases, have come to the conclusion, that the elm-bark may sometimes be fully as efficacious as the sarza; but it is not so quick in its action, nor does it so effectually aid in the administration of mercury. A decoction of the stalks and twigs of solanum is also to be recommended; and for washing the skin where high irritation exists, I know nothing better. I have nothing good to say of the salix alba or willow bark, which has had its admirers. In Germany the astragalus escapus, or stemless milk vetch, has had great reputation, and Quarin employed it largely at Vienna. I have seen it used abroad by its admirers, but have no great faith in it as a substitute for sarsaparilla. I must, however, now take leave of this remedy, which, after all that has been said and written both in its favour and against it, will yet obtain a very high character, more especially as the druggists of the present day better understand its management, and it is very gratifying to find so many scientific men amongst that class of useful persons upon whose practical knowledge, and upon whose love of truth, we are so much dependent for the success of our labours; it is most gratifying to the medical profession to find within the last few years such improvements in the appearance of our drugs, and such laborious investigations carried on by some of the best informed men upon the nature of vegetable and mineral products.

LEAD.—PLUMBUM.—SATURNUM.

Both from sacred and profane history we find that lead must have been almost coeval with the earliest dawn of civilisation. From Pliny we learn all that his predecessors had observed regarding it, and the facts he has collected are of some interest. From his authority, and likewise that of Dioscorides, we know that some of its preparations were used in medicine. The Romans obtained from this country that which they used for leaden pipes, for the conveyance of water, for sheet lead, for the alloys, called argentarium and tertiarum, for making psimmythium, or our white lead, which they dissolved in vinegar, and made an impure acetate of lead; and for forming the cerussa usta, which is nearly the same as our red lead, and which was accidentally discovered during the burning of the Piræus.

Pliny had the idea that lead regenerated itself, and that if an exhausted mine were closed up for some time it would restore itself. The alchemists made many experiments with this metal; they gave it the name of Saturn, to which they compared it, because they believed it to be the oldest

metal, and, as they imagined, the father of all the others. From its property, too, of absorbing all the other metals, and apparently destroying them, it was believed to have the same attribute of devouring its children, which the fables of Greece had taught that Saturn was remarkable for; hence the term saturnine preparations is to this day given by many authors to the different combinations of lead. They pretended to have the power of converting the metal into silver, and Geber believed that by frequent calcination of tin, it might become lead. The pharmacological chemists who succeeded the visionary alchemists, exerted themselves to render lead a medicinal agent, and they made various attempts to get rid of the noxious properties of this metal, for they very early observed that it was marked by a destructive and paralytic influence upon the human body.

The consequence of the various experiments and processes followed by these different inquirers has been, that we are now fully acquainted with the physical properties, the natural history, the union with different bodies, the action upon water and upon acids, the medicinal uses, and the toxicological properties of a mineral, which, while it is most useful in the arts, and its application to the purposes of life, has produced the most terrible consequences, and has in former days tended to aggravate the miseries of life. Lead is characterised by its extreme weight, by its easy fusibility, its softness, and its malleability. It has little ductility; it is seldom pure, being generally in combination with silver; this metal is, however, in such small quantities, as to render the attempt at extracting it of little service. Oxygen enters into combination with lead in three proportions, which differ from one another in their composition, and their chemical and physical properties. The protoxide contains one proportion of the gas and one of metal; it is white when it contains water, but when perfectly dried it becomes of a beautiful yellow. The deutoxide is formed of one and a half proportional of oxygen, and one of lead, and is of a beautiful red colour, and is commonly called minium. The third, or peroxide, holds one part of metal and two of oxygen, and is of a brownish colour.

The carbonate of lead is commonly known by the name of white lead; it is either in the form of a snow-white powder, or in white chalk-like masses. It is rarely met with in the shops in a pure state; it is distinguished by dissolving with effervescence in nitric acid. What is precipitated from the solution by potash is white, and is redissolved by its excess; it becomes black on the addition of hydrosulphuric acid; it becomes yellow by heat; and, with the addition of charcoal, it is reduced to a metallic state. It is very often adulterated by the admixture of some of the sulphates, the consequence of which is, that it is not thoroughly acted upon by nitric acid. The acetate of lead, and the liquor of the diacetate, are admitted into our Pharmacopœia. The first of these preparations is known under the name of sugar of lead; the saccharum saturni, and the cerussa acetata of former editions; it is made of oxide of lead, rubbed to powder, four pounds and two ounces, of acetic acid and of distilled water, each two pints. The acid is mixed with the water, and the oxide is then added, and a gentle heat applied to dissolve it; this is then strained, and evaporation is performed, that crystals may be the result, which are generally very small, and are four-sided prisms, colourless, of a sweetish taste, of great solubility, and little acted upon by the atmospheric air.

The diacetate of lead has long been known under the appellation of Goulard's extract, and is the subacetate of the olden time; a solution is the form under which it is ordered. The liquor plumbi diacetatis is thus directed to be made:—Take of acetate of lead two pounds and three ounces, oxide of lead, rubbed to powder, one pound and four ounces, water six pints; boil them for half an hour, frequently stirring, and when the liquor is cold, add of distilled water as much as may be sufficient to measure with it six pints; lastly, strain the solution. A dilute solution of this preparation is ordered to be made of a fluid drachm and a half, of distilled water a pint, and of proof spirit two drachms; this is given in order that there may be a solution of proper strength, and that distilled water should be used, as it is a matter of importance, that no water containing either carbonate of lime, sulphate of lime, or hydrochlorate of sodium, should be employed, for the solution would be turbid, and the smallest quantity of carbonic acid in the water decomposes it. When lead is exposed to the atmospheric air it is soon tarnished, and a thin crust of carbonate of lead is formed, which may be proved by immersing it in nitric acid. If water be completely free from air, it exerts no action upon lead, but if there be the slightest quantity of the carbonic acid present it is very quickly acted upon.

This is a subject of the deepest importance to the welfare of the community, and has, from a very early period, obtained from physicians and from philosophers the most earnest inquiry. The celebrated architect, Vitruvius, has a very important observation upon the use of leaden pipes for the conveyance of water, and some strong remonstrances against their employment as most insalubrious; he points out the appearance of those who are employed in occupations in which lead is used. Palladius maintains the same opinion, and likewise insists upon the conversion of the lead into the cerussa

by the action of water. Galen when giving directions for the preparation of which the heads of the poppy were the basis, recommends pure rain-water, and directly says that water running through leaden pipes is not to be employed. Aetius likewise condemns the use of rain-water which has flowed down a roof covered with lead. Hieronymus Mercurialis, in his observations on the aqueducts of Rome, has given us some valuable information, which leads to the belief that the old inhabitants of that city avoided leaden pipes in their aqueducts and reservoirs.

This subject, together with an examination of the means by which the poison of lead may be supposed to gain admittance into the human body unobserved and unsuspected, was taken up with great zeal and great ability by that elegant classic and learned physician, Sir George Baker. Six papers were read at the *Royal College of Physicians* between June 1767 and August 1785, which contain a mass of information upon some points which occupied so much attention as to have effected the great object he had in view, the showing the dangers that are attendant upon the employment of culinary vessels containing lead, and the various forms in which the lead finds its way into domestic purposes, producing the most fearful disorders, though experiments do not confirm the opinions of danger arising from the conveyance of water in leaden pipes, nor even from its long continuance in leaden cisterns. Since that time Dr. Lambe has published his researches into the properties of spring waters, and infers that most, if not all, spring waters have the power of acting upon lead, and rendering it noxious. Dr. Thomson confirms these views as far as that water corrodes the lead, but that the quantity, as it is suspended in water, and not dissolved in it, is too minute to be injurious; this confirms the opinion of Sir George Baker, and of Heberden; the latter of these physicians had kept some lead in water for twelve years in a phial, there was at the bottom of it a copious white precipitate, and its sides were also covered with a crust of the same colour; upon testing it, he came to the conclusion that lead may be mechanically mixed with, and suspended in, water, but not dissolved in it. Galen has observed, that the sediment of water kept in leaden vessels renders those who swallow it subject to intestinal disorders, but it is only to the deposit that he there alludes. Guyton Morveau arrived at the conclusion that distilled water, which is the purest of all waters, acts rapidly on lead by converting it into a hydrated oxide, and that some natural waters which hardly attack lead at all are prevented doing so by the salts they hold in solution. Our distinguished toxicologist, Dr. Christison, thinking that further researches were required to elucidate these contradictory statements, investigated carefully some branches of the subject, and the summary of the facts which he arrived at is very interesting. Distilled water, deprived of its gases by ebullition, and excluded from the contact with the air, has no action on lead; but if the water contain the usual gases in solution, the surface of the metal, freely polished, becomes quickly dull and white. When the air is allowed free access to the water, a white powder appears in a few minutes around the lead, and this goes on increasing till, in the course of a few days, there is formed a large quantity of white pearly scales, which partly float in the water, but are chiefly deposited in the bottom of the vessel. The process of corrosion goes on as long as atmospheric air is allowed to play freely on the surface of the water, but gradually becomes less and less, provided the water be not occasionally shaken to prevent the adhesion of the powder to the surface of the lead; the lead which is dissolved by the aerated water is in the form of carbonate. This property which pure aerated water possesses of thus corroding lead, is variously affected by foreign ingredients which it may hold in solution, and I must refer you to the work on poisons by Dr. Christison, for an inquiry upon a subject of very deep importance in a toxicological point of view, and embracing some matter of the greatest consequence to society, no less than the employment or the abandonment of lead in many of the most common purposes of domestic economy.

CASES OF PARALYSIS CURED BY STRYCHNINE.

By W. C. Clough, *Esq.*, *M.R.C.S.*, *Tonbridge Wells.*

Longum est iter per præcepta, breve et efficax per exempla.

On the 24th of August last I was requested to see John Cook, residing in the Grosvenor Cottages in this place, who, I was informed, had been suffering from paralysis of the lower extremities for nearly twenty months. During this time various plans of treatment had been resorted to with no advantage. On my visit I ascertained the following particulars:—The patient was 25 years of age, light complexion, bilious temperament, and prior to the present attack had always enjoyed a good state of health; for some years past he had acted in the capacity of a gentleman's coachman. He attributed his ailment to a severe cold caught whilst driving the family with whom he resided to Bath; this was on the 7th of January, 1836; the day was exceedingly wet, and very cold, and on his arrival he felt chilled. On the ensuing morning the

back and loins were painful; a sense of weariness and numbness was likewise experienced in the lower extremities; there existed slight feverishness, accompanied with thirst, and to these symptoms a severe headach was superadded. On attempting to turn himself in bed the limbs appeared stiff, and, to use his own expression, "as though he could not use them," notwithstanding he managed to get up, and went to Clapham next day, but complete paralysis succeeded. He consulted a medical man there, but experiencing no benefit, felt desirous to proceed home. To accomplish this he was removed to Hartfield, in Sussex, his native place, and was visited by the gentleman who had always attended the family. After remaining under treatment for five months, he was pronounced incurable, and, at his own request, was brought to Tonbridge Wells, at which place he was attended by a professional man for three months and a half. From this change he experienced not the slightest benefit, and remained after this period nearly six months without any treatment whatsoever; he was then admitted into *St. Thomas's Hospital*, and remained under the care of one of the physicians of that establishment three months; he then returned to Tonbridge Wells, having been discharged as incurable.

At this time I saw him, and his condition was as follows:—He was perfectly bedridden, without the least use of his legs, not even a toe could be moved; the limbs were nearly divested of their natural covering, in fact they resembled two sticks, for verily nothing but skin and bone remained; the poor fellow had a cord attached to the upper part of his bed, and by this means was enabled to raise himself as necessity required; the tongue was slightly coated, and it was quite evident the liver was not acting freely; the appetite was tolerably good. I had almost omitted to mention that the urine was scanty and high-coloured, possessing also an offensive odour. Having attended a brother of this patient's in a similar attack, in the year 1834, and being fortunate enough to restore him by means of strychnine, I determined to give this a fair trial. Cook was, therefore, immediately put upon a vegetable diet; his bowels were well cleansed, and I commenced giving the sixth part of a grain of strychnine three times a day; this I speedily increased to one grain, so that three grains were administered daily; two setons were also introduced, one over the first, and the other over the third lumbar vertebra. I believe I have not mentioned, when examining the spine, that over this particular portion of it pressure caused excruciating pain. Occasional doses of blue-pill were exhibited, and the bowels were regulated by the administration of mild doses of rhubarb and carbonate of soda.

At the expiration of three weeks the toes could be slightly moved, and in five weeks the legs could, with difficulty, be placed one over the other. At this time one of the setons could be cut out, and the patient went on progressively improving. At the termination of the seventh week Cook could stand, by means of crutches was enabled to hobble about the bed-room, and on the 4th of December last he was so well that he came to my house to thank me, at the same time informing me that he was going home to Hartfield. His legs were now well filled up, and he could walk extremely well without any assistance. I saw his brother Edward yesterday, from whom I learnt that he is as well as ever he was. Probably it may be as well to give a brief summary of the case of Edward Cook.

E. C., ætat. 27, was out dancing on the evening of the 5th of February, 1835; when very much heated and flushed with liquor, he imprudently went out into the open air to cool himself; from this cause he lost the use of his legs for seven months, but at the end of sixteen months I had the satisfaction to see him at his usual employment, shoemaking, &c.

The foregoing cases require no comment. In both were the recoveries owing to the employment of strychnine. In the case of John Cook each medical attendant had pursued the system of purging, mercurialising, blistering, cupping, setoning, &c. &c., as the poor fellow's back can well testify. Strychnine, as a remedy in such cases, I have the greatest confidence in, and I doubt not but it will be found equally efficacious in other hands than my own. I am also employing it in a case of epilepsy, and I think with material advantage, but the case is not in a sufficiently forward state to warrant more than a mere mention.

Tonbridge Wells, January 19, 1838.

UTILITY OF

MERCURY IN SYPHILIS,

WHEN PROPERLY ADMINISTERED.

To the Editor of THE LANCET.

SIR:—I had great pleasure in reading the remarks of Dr. Burridge, of Taunton, on the administration of mercury in syphilis, in THE LANCET of last week, which, together with his cases, bear out the results of my own practice. If the following observations can throw any light upon the subject, I have no doubt you will favour them with a place in your valuable periodical.

I have never seen it demonstrated, either theoretically or practically, that mercury, properly used, is an inefficient remedy in syphilis. Nor have I known a case of salivation, of phagedenic ulcer in private practice, of protracted or secondary syphilis, to occur where this remedy had been judi-

ciously used. I believe practitioners are not always sufficiently watchful in feeling their way, if I may so express myself, with the doses, which in some habits are uncertain. And with regard to the action of remedies generally, there is one thing of which I have been convinced in practice, namely, that if a very small dose of mercury produce salivation, or one of tartarized antimony vomiting, the notion that the minor or prior effects of such remedies would be omitted or jumped over, is *not true*. It only shows a peculiar sensibility to the effects of the remedy, and that a much smaller dose, or a milder preparation, would produce the proper curative effect.

On a former occasion I suggested a probable modus operandi of mercury in syphilis; it is as follows:—

Before nutrition takes place, decomposition of the nutritious matter contained in the arterial blood is effected, and a distribution of the elements in the required forms. Decomposition must also take place before its counterpart, absorption, can be effected; that is, cellular tissue and bone are not absorbed as cellular and bone, but their elements, or new forms. On this principle we have a more rational theory of the modus operandi of mercury in syphilis, and in cutaneous diseases depending on a specific virus; by increasing that species of absorption which is the counterpart of nutrition (both governed by the distribution of the ganglial nerves), it promotes decomposition, and without purging it from the system, as generally conceived, from innocuous compounds of the elements of the poisonous secretion.—(See LANCET, Vol. II. 1836-7, p. 692.)

I believe phagedenic ulcer is often *promoted*, if not *produced*, by the effect of mercury on the absorbents; larger doses being administered than necessary for the proper curative effect. And though sometimes it may be caused by circumstances not under the control of the practitioner, yet this cannot be brought forward as an objection to the use of mercury in syphilis.

Protracted and secondary disease have been owing, in every case which has come under my observation, either to the total or partial neglect of mercury, and sometimes to its use being precluded by injudicious dosing in the first instance. I have no hesitation in stating this, and would bring forward cases, if I had any better than those related by Dr. R. Burridge.

The outcry against the use of mercury in syphilis, places in a strong light the bad effects of general practice, as opposed to particular,—a charge not only to be brought against empirics, but also against scientific men in large consulting practice, who must, of necessity, generalise; but whose word is taken by all in prejudice of the remedy. And, moreover, it must not be forgotten, that the cases of secondary or pseudo-syphilis which fall into the hands of consulting practitioners, have generally been first in the hands of empirics, and their history being doubtful, it is not to be wondered at if these states of disease have been looked upon as mysterious, or even somewhat misrepresented. For pseudo-syphilis appears to be only that negatively-defined disease which resembles syphilis in all respects but one, viz., its not being benefitted by the usual modes of administering mercury. I remain, Sir, your very obliged and obedient servant,

ROBERT STEVENS.

Kennington Common, Feb. 14, 1838.

CASE OF

SPONTANEOUS EVOLUTION OF THE FŒTUS.

By J. MOORE NELIGAN, M.D., *Clonmel, Ireland.*

MARY MORRISSEY, ætat. 26, the mother of four children, a strong healthy woman, with dark hair and florid complexion, was seized with labour-pains, which were slight and irregular, on Saturday afternoon, February 3rd, 1838. In the course of that evening a discharge of a portion of the liquor amnii took place, when the pain ceased; during the three following days there was a constant dribbling of the waters, with occasional inefficient pains. On Wednesday night, about twelve o'clock, they became more vigorous, and continued regularly until I saw her at nine o'clock A.M. on Thursday morning. She states that all her previous labours were natural and speedy, with the exception of the second, which was an arm presentation, when the child was turned.

On examination, the right-hand and forearm were found without the external orifice of the vagina, the thumb towards the front of the pelvis, and the palm of the hand turned to the left side. I determined immediately to attempt the turning of the child, not without apprehending a good deal of difficulty in the process, owing to the waters having been so long discharged, and from the violence of the pains, which recurred every five or six minutes. The os uteri was reached without much difficulty, and was found well dilated; by efforts made during the short intervals between each pain, I was able to get the fore-finger of my left-hand as far as the base of the right scapula of the fœtus, when I found the uterus contracted strongly around the body of the child, and any attempt to reach the knees and feet was attended with such forcible contraction of the womb, that I was obliged to desist and withdraw my hand.

I now gave her a draught with sixty drops of tincture of opium, and decided to

wait for its effect to be produced before another attempt should be made. At half-past eleven Surgeon Phelan returned with me, when we both again essayed to turn, but without success, as, although the pains had ceased for nearly an hour, every movement of the hand in the womb excited such violent contraction of that organ as to endanger its rupture.

At three o'clock P.M. Dr. Scully saw her with us; a renewed attempt to reach the feet was made by him, but the action of the uterus opposed so great an obstacle that he was forced to desist. On consultation we determined, as the pulse did not admit of any abstraction of blood, to administer eighty drops of the tincture of opium, and allow three hours to elapse before any further attempt. When we returned at six o'clock, the midwife who was in attendance, gave us the following statement of what occurred during our absence:—Immediately after the draught was taken, she said that the pains returned with great vigour, and continued so for about a quarter of an hour, then they ceased for about an hour and a half, when, after two or three energetic pains, the breach protruded, the hand and arm not having moved, and the child, which seemed to have been dead for some hours, was expelled, the placenta following soon after; the child was of the full size, and appeared to be over six pounds weight.

Although the possibility of birth in arm presentation by spontaneous evolution, is no longer doubted, still, from the small number of cases on record, any addition to them must be of interest to the profession, inasmuch as it will assist us in deciding whether we ought to adopt the precept to wait for the evolution. That spontaneous evolution will not occur in all cases, and rarely happens in proportion to the number of arm-presentations, is proved by the statement of Dr. Burns, in his "Principles of Midwifery,"—"That he has heard of its occurrence only twice in the city of Glasgow, *though some women have died undelivered, or have not been delivered until it was too late to save them.*" From this it would appear, that it is a process of nature, on the certainty of the occurrence of which we cannot so far depend as to dispense with all interference on our part; but when we are unable to produce inversion, it is one for which we may wait, or, perhaps, endeavour to assist, as long as a due attention to the safety of the mother will permit.

In addition to the foregoing, Mr. Phelan has mentioned two others to me, which occurred in his practice, one was the first case of arm-presentation in that female; and, in the other, as in this, it was the second, a natural birth having intervened.

Clonmel, Feb. 12th, 1838.

PROCESS FOR THE

PREPARATION OF CREOSOTE.

By W. Wahl, *of Leipzig.*

(From the Archives fur die Homoopathische Heilkunst.)

This substance was first discovered by Dr. Reichenbach, in the pyroligneous acid, and subsequently in the different sorts of tar. He discovered also, by means of the dry distillation of organic bodies, parafin, eusseon, and pieamar, substances which have as yet no particular weight in medicine. By means of a series of experiments and indefatigable exertions, he succeeded in discovering creosote, being also the first person that made any medicinal experiments with it. It is not contained in the pyroligneous acid alone, in which he first discovered it, but also in tar, from which he procured larger quantities and with less difficulty. It is of some service, perhaps, to know that it is contained in the acid; but it is better to make use of the tar to procure it.

Empyreumatic substances form a knotty point for us to unravel; nor is it in our power to separate a single one without great difficulty and trouble. The following is Dr. Reichenbach's method of preparing creosote:—

Tar, obtained by the dry distillation of organic bodies (for instance, beechwood) is to be distilled in iron retorts until the residue consist of what is called shoemakers'-wax. This substance may be known by its hardening if dropped into water, so as to become brittle, but softening by the warmth of the hand, and becoming capable of being drawn into long threads. It is best to stop the distillation in time, that the residue may not again become carbonised and affect the distillation with empyreumatic substances of the same nature as those which are intended to be removed by means of this first distillation. This product of distillation contains oil and empyreumatic water, which latter is to be discarded. The oil called tar-oil is now put into a glass retort, and rectified, but not to dryness, the water which appears in the recipient being likewise removed. The tar-oil in both these distillations is in the beginning very light, and passes out with a comparatively small degree of heat; it however gradually becomes heavier, and requires a higher degree of temperature for the same purpose. Regard must be paid to that period of the process at which the oil ceases to swim on the surface of the water, but sinks by its own weight. The oil that remains on the surface of the water contains little creosote, consisting principally of eusseon and other lighter substances, very much deteriorating the purity of the creosote, particularly in a physiological point of view

These lighter portions must therefore be carefully removed. The tar-oil is now of a pale yellow colour, heavier than water, becomes brown on being exposed to the air, has a disagreeable smell, and has at once an acid, pungent, bitter-sweetish taste. It is now to be warmed, and bicarbonate of potash added, till carbonic acid ceases to be disengaged; it is then separated from the solution of acetate of potash thus originating, and again distilled from a glass retort, but not to dryness, taking care to remove what first passes over, as long as it remains on the surface of the water. The oil is now to be put into a caustic solution of potash of 1.12 sp. gr., by which means much heat is evolved. A part remains undissolved, still consisting of eusseon, &c., remaining at the surface, and which must be removed. The alkaline solution containing the portion dissolved is placed in an open vessel, and gradually warmed over the fire till it boils. It attracts the oxygen from the atmosphere, which decomposes a peculiar oxidisable principle, and renders the mixture brown. After it is cooled, which is effected in the open air, it is to be decomposed by dilute sulphuric acid, which is added while stirring it till the oil is liberated. This oil is again distilled from a glass retort, and through water. A small quantity of caustic potash is added to the water, sufficient to endow the mixture with a visible alkaline reaction. As part of the creosote is dissolved in water, it is necessary, in order to avoid loss, to bring the latter back into the retort several times. The water must be kept boiling, notwithstanding which the process is very slow, as the expansive power of the creosote even at 100° C. is not very great.

There is one period of the distillation in which, although there is a great quantity of oil in the retort, yet the passing over is very slow, and cannot be increased by any heat. As soon as this arrives it is time to leave off. The residue comprehends the far less easily distilled picamar, a portion of picamar, sulphate of potash, some acetate of potash, and the brown-coloured product.

The oil in the receiver must now again be dissolved in an alkaline solution of 1.12 sp. gr., after having been freed from the water which passed over with it; a quantity of light oil still remains undissolved, which must be removed, and which consists chiefly of eusseon, &c.; the mixture is again gradually heated in the open air till it boils, and is then left to cool; it again becomes brown, but less so than before; it is now to be decomposed by sulphuric acid in such quantity that a portion may be taken up by the oil; this is then washed several times with pure water till freed from the acid; it must again be distilled over water, and then contains a small portion of picamar. Phosphoric acid is now added instead of potash, the oil being warmed with it after having been shaken together in order to promote union with a proportion of ammonia contained in the mixture. A third solution of the oil follows, in a caustic solution of potash, and if the above-described process have been properly conducted, they, at this period, unite perfectly. No more eusseon is separated, nor does it turn brown on being warmed whilst exposed to the air, but only acquires a slightly-reddish tinge. Should eusseon, &c., notwithstanding, still continue to be separated, and the alkalic solution still turn brown, it must be dissolved a fourth time in the alkaline solution, and again and again, so long as any eusseon or oxidisable principle is discoverable.

The process may now, perhaps, be considered as finished, and the oil obtained by the last distillation as sufficiently pure creosote; the latter is colourless, iridescent, and has all the properties which characterise it as a medicine for caries; if it should, however, be required in a perfect state of chemical purity, it must undergo the following additional process:—It must be again distilled over pure water; the creosote thus obtained is pure, but contains water, and must be distilled by itself; in the beginning, and with moderate heat, much water passes over; this gradually decreases, and, at length, ceases altogether; some creosote passes over simultaneously; this must all be removed; it is only when at heat 203°, C. that creosote alone passes over, that it may be considered pure; it may be brought to a still greater degree of purity by being rectified by itself, and the fumes passed through chloride of lime; it is then found that some oil passes over at a temperature short of 203°, C, proving that some water still remained; this rectification ought to be continued till the creosote only attains its boiling point at this degree; it is necessary to keep the retort over a spirit-lamp, or, at least, over such a medium as shall only heat those parts which are covered on the inside with creosote, not the dry parts of the retort, since, by the least heat above 203°, C, the creosote might be carbonised, or otherwise decomposed; the same care must be observed throughout; the sand in the bath must never rise higher than the liquid contained in the retort, or the contents will chafe and adhere to the sides; at the same time the vapour is apt to become condensed before it reaches the neck of the retort, to avoid which the belly of the retort must be kept from cooling by encircling it with cloths; if this be neglected the process is very slow, otherwise the creosote passes over very freely; at first, the distillation of the creosote containing water has to contend with sudden ebullitions which cannot be controlled by the usual means; as long as this continues the fire must be kept very low, and only then increased when the

ebullition ceases in consequence of the water having been gradually expelled; the residue requires an equal degree of attention, and must not, in any of the distillations, be brought to dryness, as a fresh carbonisation would destroy the purity of the product. In small quantities the creosote may be distilled over without any residue; but in large quantities, where the boiling process is protracted beneath the influence of the atmospheric oxygen, there always remains a small brownish residue in the retort, which seems to denote a gradual decomposition of a small portion. It may be easily seen, that in order to obtain, chemically, pure creosote, the last distillation ought to be conducted in vacuo, by which means the influence of atmospheric air, and of excessive heat, is avoided.

ON LACERATION OF THE PERINEUM IN WOMEN.

BY PROFESSOR DIEFFENBACH.

Laceration of the perineum, commonly the effect of difficult or ill-managed labour, does not generally fall under the notice of the surgeon, unless the injury be extensive, and the inconvenience produced by it great. When the laceration is small, nature is, in most cases, able to effect a cure; and even where the whole length of the perineum has been torn through, the orifice of the rectum usually remains intact. I have already, in another work, communicated the result of my experience in the treatment of extensive lacerations of the perineum; the following observations are, therefore, to be considered merely as a supplement to the information then conveyed to the profession. The most recent cases of laceration of the perineum, which have fallen under my notice, are the following:—

Case 1.—The perineum of a young woman, 26 years of age, pregnant for the first time, and in whom the genital organs were remarkably small, was lacerated to the extent of an inch. I saw the patient six hours after the occurrence of the accident, and having removed the coagulated blood and lymph by which the edges of the wound were covered, I brought the latter together by three sutures. The parts were frequently bathed with warm water, and then some lint, moistened with the lead lotion, applied. On the third day I removed the two common sutures, and on the fourth, the twisted one. The union was perfect. The continued use of the Goulard's lotion removed, in a few days, some inflammatory tumefaction of the labia.

Case 2.—Laceration of the perineum, to the extent of an inch and a half, occurred in a female, 30 years of age, while giving birth to her third child. I saw the patient ten hours after delivery; the wound was clean, and its lips filled with firm coagula. I applied four sutures; two common, two twisted. The dressings were the same as those employed in the preceding case. On the third day the edges of the wound appeared united, as far as the commissure. I now removed the anterior suture and allowed the rest to remain until the fifth day. Up to the eighth day the knees were bound together with a handkerchief. The union now appeared to be solid, and the conformation of the external genital organs was not, in the slightest degree, modified.

Case 3.—A young woman, 22 years of age, fell from a height of a few feet, and struck the perineum against the edge of a stool. On examination, the genital organs were found considerably swollen, the vagina full of coagulated blood, and the left side of the perineum lacerated to the extent of half an inch. Two twisted sutures were immediately applied, and the antiphlogistic method of treatment had recourse to. The inflammation was thus quickly subdued, and the sutures removed on the fourth and fifth days: the cure was complete. An œdematous tumefaction of the surrounding parts, which persisted for several weeks, was removed by the use of Goulard's lotion.

Case 4.—A young married woman, 24 years of age, fell upon a porcelain chamber utensil, which broke into several fragments and wounded the perineum in various directions. Both labia were divided in different places, and one wound extended backwards for about the length of an inch, through the middle of the perineum. There were also several deep, long wounds in the parietes of the vagina, from which I extracted some fragments of porcelain. The patient had lost a considerable quantity of blood, and lay in a state of complete syncope. After having cleaned the wound and the vagina with injections of cold water, I applied a number of sutures at the different points which seemed to require them. The parts were covered with lint moistened in a cold lotion; leeches were applied to the inflamed organs, and a strict regimen enjoined. The whole of the wounds were quickly united, with the exception of one small one, which suppurated, but finally healed in a few weeks. The patient, since then, has given birth to several children, and the cicatrices have remained perfect, not one having given way during labour.

Case 4.—A female, 30 years of age, suffered under incipient prolapsus of the uterus. The genital organs were remarkably

relaxed and large, but the perineum, on the contrary, very small. It was, however, impossible to determine whether the enlargement of the entrance of the vagina and the narrowness of the perineum were the consequences of a trifling laceration, or of simple dilatation. I immediately determined on having recourse to Fricke's operation, and after having divided, with the scissars, the posterior angle of the fourchette, I applied eight sutures, partly twisted, partly common. In addition to these, I placed a couple of fine ligatures inside the vagina, through the edges of the mucous membrane. The operation was attended with complete success. After removing the sutures the breadth of the perineum was found to be considerably increased, and the orifice of the vagina contracted within reasonable bounds.

Case 6.—Laceration of the perineum, of a portion of the vagina, and several inches of the rectum, occurred in the person of a female 26 years of age, during her first labour. Six or eight hours after the accident I was called in, and commenced by closing the wound in the wall of the vagina with five or six sutures. I then treated the rectum in the same manner, and finally closed the lacerated wound of the perineum, partly with common, partly with twisted sutures. The parts were constantly cleaned with lotions and baths, but the obesity of the patient prevented the local treatment from being followed up in as efficacious a manner as was desirable. When the sutures came away the greater part of the perineal wound was found to be ununited, but a portion, near the anus, had healed. In this case the application of the suture was only partially followed by success; the patient, however, was able to retain both fluid stools and flatus.

Case 7.—The next case was a still more difficult one, although the result was more fortunate. It occurred in the person of a woman 40 years of age; during a difficult labour the perineum, half the vagina, and an inch and a half of the rectum were lacerated. I visited the patient on the following day, and immediately judged that the case would be one of extreme difficulty, for I had seldom seen a more corpulent woman. The abdomen hung down over the middle of the thighs, and the labia were of enormous dimensions. Having placed the patient in a convenient posture and removed the coagula of blood, &c., I first brought together the edges of the wound in the rectum with four points of suture, and then applied a strong suture to the lacerated portion of the vagina, bringing the extremities out through the vulva; complete coaptation of the wound in the vaginal parietes was obtained by four other sutures of lesser dimensions; finally, the wound in the perineum was united by two common sutures, and two twisted ones. The tumefaction of the parts prevented me from making any examination on the following day, and we were compelled to confine ourselves to the simple use of warm fomentations and injections. Several of the sutures which had been placed on the perineum and vagina had begun to cut through the tissues on the third and fourth days, and were all removed on the sixth day. The anterior part of the perineum, as well as the lower portion of the vaginal wound, were now found to be ununited, and the latter communicated through a small opening with the rectum. The parts were frequently washed with a strong decoction of camomile flowers, and the process of granulation thus encouraged. After the lapse of a few weeks the opening between the vagina and rectum was closed, and the whole of the lacerated parts in the perineum were united, with the exception of a small slit at the anterior part.

Case 8.—In the following case several obstacles impeded the operation and diminished the chances of cure:—A woman of nervous temperament and feeble constitution, twelve years anteriorly, while giving birth to her first child, met with a very severe accident, a considerable portion of the vagina, the whole of the perineum, and two inches of the rectum, having been torn through. On examining the unfortunate woman I found the genital organs and the rectum united by a large open slit, and it was scarcely possible to determine at what point the perineum had formerly existed. I operated, in this case, in the manner which I commonly adopt under similar circumstances. I freed the rectum a little laterally, in order to conserve its proper diameter, then refreshed all the edges of the injured parts, and united the rectum with five, the vagina with six, and the perineum with four sutures. The parts now presented a pretty natural appearance, and as no tension existed I did not think it necessary to have recourse to the lateral incisions. Inflammation set in moderately. Goulard's lotion was applied to the parts, which were frequently examined. The sutures appeared firm on the third and fourth day; they were, however, removed, with the greatest caution, on the following day, and the union appeared perfect. After the lapse of a few days, during the first evacuation from the bowels, a communication between the rectum and vagina was discovered. For several months the edges were touched with caustics, but without any great benefit; the patient was unwilling to submit to any further operation.

Case 9.—A healthy woman, 36 years of age, had the misfortune to listen to the instances of a young man, by whom she became pregnant. She was herself small in person; the pelvis and genital organs were

also small, while the child was remarkably large. During delivery the perineum and genital organs were injured to a very remarkable extent. I was called to see the woman on the following morning, and found her bathed in blood. The vagina and rectum formed one large cavity, the edges of which were ragged. A large flap, three and a half inches long, and two broad, hung down from the external genital organs, and on examination was found to belong to the vagina, to which it was only connected by a band of tissue not broader than an inch. After consultation with the physician in attendance, it was determined that some effort to relieve the unfortunate woman should be made, although the case appeared to be a very hopeless one. I commenced by bringing together the sides of the lacerated rectum, and for this six sutures were necessary; the wounds of the vagina required no less than ten sutures, and for the perineum five were employed. It is unnecessary to mention that one end of each ligature was cut off close to the knot. Although I did not expect to obtain anything like a complete cure in this case, yet I hoped, at least, to render the woman's life less uncomfortable. The treatment was moderately antiphlogistic; the wounded parts were frequently washed with warm Goulard's lotion, and, contrary to our expectations, the injured parts healed so completely by the first intention, that, after the removal of the numerous sutures, nothing could be observed but a fine cicatrix. A small communication between the rectum and vagina, healed after a lapse of eight days, on touching the edges with caustic. Several physicians have examined this case since the cure, for the obtaining which I am much indebted to the assiduity and talent of my assistant, Dr. Hildebrandt.

I have described the above cases as briefly as possible, omitting every circumstance which was not strictly essential. It should, however, be mentioned that I took care to produce constipation for the first six, eight, or ten days, by small doses of opium. Whenever the desire to go stool became excessive, a large tube, open at one end, was passed into the rectum, and a quantity of warm water thrown up, by which the scybalæ were softened. The catheter was also introduced several times within the twenty-four hours.—*Berlin Med. Zeit.*, December 27, 1837.

MR. NEWPORT'S REPLY TO PROF. GRANT AND DR. MARSHALL HALL.

To the Editor of THE LANCET.

SIR:—The intemperate remarks and accusations of your correspondents, Professor Grant and Dr. Marshall Hall, contained in THE LANCET of February 17, oblige me to request that you will allow me space in your Journal for my vindication. It has been my misfortune to have been placed at different periods of my life in circumstances of no ordinary difficulty, and these circumstances have now enabled two distinguished investigators of science, conscious of their influence with the public, and, as it would seem with the object of crushing their victim at "one fell swoop," to cast, from the accident of my having been brought into communication with them,—a doubt over the fairness of my writings, and general conduct, and thus to place me on a very unequal footing with them on questions on which the public mind ought to be entirely unbiassed. The very nature of their malignant accusations, and the evident injustice of commingling with a question of science, reflections and statements, whether true or false, relating to private life, oblige me to enter into such details as I should not otherwise have thought of troubling you with.

I came first to London in January, 1832, and was soon introduced to Dr. Grant, by one of his brother professors, which gentleman it was who subsequently interested himself so warmly in my behalf with Dr. Grant, and the other professors, and not Dr. Hall himself, as asserted in his letter (p. 749). The occasion of my introduction to Dr. Grant arose from my having been engaged while in the country during the three preceding years, in studying the physiology and internal anatomy of insects, of which I had prepared copious notes, with the view, at that time, of publishing them (and which are actually written on a collection of my printed proposals for publication), and had made a large collection of drawings from my own dissections, without reference to, or a knowledge of, the labours of other anatomists. These drawings were first exhibited to Dr. Grant in February, 1832, at his own house, in the presence of two of his pupils, when I submitted to a close examination by Dr. Grant, both before and after those gentlemen had taken their leave, respecting my knowledge of these subjects, and communicated to him many facts, some of which I have reason to believe he was then unacquainted with. He expressed himself so well pleased that he proposed to me to write a paper on some subject connected with my investigation, and offered, in the

event of my doing so, to introduce it to the *Linnean Society*. This was determined on, but with the intention of presenting it to the *Royal Society*. The paper was completed by the end of April, or the beginning of May, and as Dr. Grant had suggested the composing of it, I felt it was a respect due to him to submit it to his examination, which accordingly was done, and I then struck out several passages in deference to his opinions, in proof of which I may state that I still possess the original draft with Dr. Grant's own hand-writing notes in the margin. During this period I was in frequent communication with Dr. Grant, and our conversations generally turned on the nervous system, and he interrogated me very closely respecting what I had observed, particularly as related to the changes the nervous system undergoes during the development of the insect. On one occasion I carried to his house, at his request, an insect prepared in the manner in which I usually dissected, for the purpose of showing him my mode of proceeding, and of demonstrating in it the *transverse nerves*,—the very nerves which I was describing in my paper as *respiratory nerves*, and which he since claims to having assigned a motor function to in Nov. 1832. My paper was delivered to the *Royal Society* on the 22nd of May, 1832, and printed in the following October. During this interval I was continuing my observations in the country, but returned to London in October, and *then first became a pupil* in Dr. Grant's class of comparative anatomy. This was *after* my first paper had been received by the *Royal Society*, and in which I had then described the transverse nerves in reference to *function*, as respiratory nerves (see "Phil. Trans.," 1832, p. 389). The lecture in which Dr. Grant claims to have assigned the *motor* functions to those nerves, was delivered after my paper was printed, about the 23rd of Nov., 1832; but neither in my own notes of that lecture, nor in those taken by two other pupils, is there any mention made of this circumstance. In the notes taken by Dr. Baly, which I obtained only since my first communication to THE LANCET, on the 6th inst., there are two observations which show that Dr. Grant had mentioned the subject. From the first of these observations it is evident that it was not delivered as a doctrine, nor is it enforced as such even in the second. It is in this lecture, therefore, that Dr. Grant claims to have been the first to make public an opinion respecting the motor function of the transverse nerves and other structures in articulata; and it was in this lecture that he produced my first paper to his class, and spoke of it in terms of the highest commendation, and compared it with the works of Lyonet, and Straus Duckheim. The use he then made of it, in connection with the subject of the transverse nerves, and the phenomena of development, will be best shown in quotations from Dr. Baly's notes, as follows:

"In the *sphinx ligustri*, Mr. Newport has observed the anterior of the abdominal ganglia drawing up; he thinks he has seen the globules (granules of gray matter) within these pass up to the thoracic ganglia. The anterior pair of ganglia get into the thorax, then there are only five pair of ganglia left in the abdomen;" and, a little further on—"the regular ganglia appear to be double, a nervous chord descending from each. Another nerve arises from the posterior part of each (ganglion), and then dividing and branching off to the sides (diagram). From each division there are filaments descending from the nerves given off laterally from the ganglia;—*Mr. Newport says one nerve descends to the ganglion itself. If these nervous filaments had no connection with the ganglia they might be analogous to motor nerves.*" Immediately after this sentence the ribband-like structure in the scorpion is described; and at the close of the lecture it is remarked—"We have seen nerves *apparently* corresponding to the nerves of sensation with ganglia, and to the nerves of motion without ganglia, &c. &c."

In my paper on the sphinx, which was produced by Dr. Grant to his class on this occasion, and which had been *revised* by Dr. Grant, and was delivered to the *Royal Society* on the 22d May, 1832, the function of the transverse nerves (which are alluded to in Dr. Baly's notes), is noticed in the following words, after a description of their connections:—"From this it seems probable that these nerves may constitute the origin of a distinct system, but whether this system in insects be analogous either to the sympathetic or to the respiratory system of vertebrated animals, is yet a matter of inquiry. From the principal branches from each abdominal plexus being always distributed among the tracheæ, near the spuracula, there seems reason for inclining to the latter opinion." (Op. cit. p. 389.) This passage, printed before the delivery of Dr. Grant's lecture, proves that I was at that time studying the transverse nerves, with reference to *function*, and that in describing them in my paper as *respiratory nerves*, I was not endeavouring, as insinuated by Dr. Grant in his letter, "to avoid indicating their motor function," in consequence of his subsequently assigning a motor function to them, every one being aware that *respiratory* nerves are nerves of *motor character*.

But I have farther proof that I had been expressly engaged in searching for motor and sensitive nerves in insects, at least *nearly twelve months* before I first came to London, and *nearly twenty months before I became a pupil in Dr. Grant's class-room*, as is proved by the following extract from the original notes which I brought with me to London, and which is dated March, 1831,

the original of which I shall be happy to submit to the inspection of any one who may favour me by an examination of it. The following is a copy with its heading:—

"*Double Origin of Nerves.*

"Hitherto I have been unable to observe anything analogous to what Professor Bell has discovered with regard to the double origin of the nerves in vertebrated animals, although I strongly suspect that something of this kind does really exist in the invertebrated. My reasons for suspecting it are these:—In dissecting the brain of *apis retusa*," &c. &c. After this follows a long description of parts, &c., and other observations on them, and the entry is closed by the following remarks:—

"Now, as the chords of the body are produced from this (inferior portion of the cerebral mass or brain) is it not probable they are formed from one portion of this part, which I consider analogous to the cerebellum, and of the superior portion, which I take to be the cerebrum? And if such be the case, that it (the first subœsophageal ganglion) answers to the union of the parts from the cerebrum and cerebellum, in the composition of the nerves of the larger animals; and also that since there are no double roots to the nerves of insects, when they originate from the spinal chord or ganglions, that this union is effected at the very origin of the longitudinal chords with the brain."

This extract, and the circumstances before stated, will be sufficient to prove that my opinions respecting *functions* of these structures in insects originated with myself, *long before* I had attended Dr. Grant's lectures, or had the honour of being acquainted either with him, or with Sir Charles Bell, and that they were not derived, as asserted by Drs. Grant and Hall, from the information delivered to the pupils in Dr. Grant's class-room.

Your readers might be led to infer from the tone of Dr. Grant's letter, that it was he who *first* pointed out *to me* the structures of the nervous chords in insects; but this would be incorrect, since neither Dr. Grant nor any previous anatomist, has noticed the existence of *three distinct elements* in the spinal chords, or cerebro-spinal system of this class. The structure unto which Dr. Grant has assigned the *function of motion*, was first described by Lyonet, and was well known to every anatomist before it was designated by myself the *respiratory*. For other facts connected with the anatomy of these structures in the articulata, I refer your readers to my paper in the "Philosophical Transactions." It was the omission of these facts by Dr. Hall to which I referred in my letter of Feb. 6. My claims to having first pointed out the correct anatomy of these parts are recognised by Professor Müller, in his "Archives," from which I extract the following passages:—

"Among the most distinguished labours in comparative anatomy, during the past year (1834), is that of Newport on the 'Nervous System of the *Sphinx Ligustri*,' &c. This investigation has enlarged our knowledge of the facts already adduced by Lyonet, Müller, Brandt, and Straus Duckheim, and the author has supplied us with new and important facts in his description of the *nervi accessorii respiratorii*. The author, instigated by an earlier observation of Müller, respecting a third column of the nervous chord of the scorpion, has also again found this nerve here. An important discovery of the author, is, that he has found the abdominal chords of insects and crustacea to consist of an anterior and posterior pair of columns. The upper pair of columns has no share in the ganglia of the abdominal chord, which belongs exclusively to the under pair of columns, &c."

Now, it is somewhat remarkable that Dr. Grant has not come forward earlier to assert his claim to the discovery of the motor and sensitive columns in the lobster, and also to deny the statement contained in my paper, that I had shown those structures to him. It is now three years since that statement was published, and is it not probable that if Dr. Grant had considered himself entitled to claim this discovery, he would, at least, have told me so when I called upon him about three months afterwards for a certificate, when he gave me a most unexceptionable one, which he surely could not have done had he considered himself wronged by my publication; or, if he had omitted to tell me of it at that meeting, he surely would have mentioned it at a second interview immediately before I was leaving London, and when he actually introduced the subject of my paper with reference to the motor and sensitive columns of invertebrata. On the contrary, he then told me, most distinctly, that the discovery of these columns "*was not his, was not mine, but was due to Professor Müller,*" whose drawing of the scorpion he produced, as having used it in his lectures.

Professor Müller, as I have above shown, had already reviewed my paper in his "Archives," and had given the credit of the discovery of these columns in crustacea and insects to me. It was this statement of Dr. Grant's on which I founded my observation in my letter of the 6th inst., that he had not taught the doctrine at that time as his own. I have stated in my paper in the "Philosophical Transactions," 1834, that my examination of the nervous system of the lobster, was undertaken entirely at the suggestion of Sir Charles Bell. On the publication of the remarks in Dr. Hall's lecture, LANCET, Feb. 3, I immediately wrote to Sir Charles Bell, requesting the favour of an answer to

the following inquiries:—First; whether he remembered suggesting the inquiry to me in May, 1833. Secondly; whether he remembered my informing him, in the month of August following, that I had found the structures sought for in the lobster. Thirdly; the circumstance of my presenting to him, on the 25th of November, 1833, a preparation of the lobster exhibiting the structures sought for, and which he compared with a drawing of the same; and, lastly, whether he remembered my subsequently requesting the loan of that preparation in order to exhibit it a *second time*, as I then stated, to Dr. Marshall Hall, he having requested me to do so? To these inquiries Sir Charles Bell replied, by return of post, as follows:—

"My dear Sir:—I can have no hesitation in answering your inquiries. It happens, that, in order to satisfy some of my diligent students, I have been giving one or two extra lectures on the subject of your inquiries, and it was only last Saturday I detailed the manner in which you dissected the lobster, and discovered the two columns. If you should ever fall in with any of my pupils of this year, I do hope you will be gratified with their report of what I said of you. As to the questions you put to me, *four* in number, I answer, you are perfectly right, and may add my assent to all of them. I shall be gratified in hearing of your welfare, and believe me yours,

"Charles Bell.

"Ainslie-place, Edinburgh, Feb. 5."

I have thus shown that my opinions respecting the existence of motor and sensitive columns in invertebrata, originated with myself, long before my acquaintance with Dr. Grant and Sir Charles Bell, while the above letter will sufficiently prove that the examination of the lobster, and re-examination of insects, were suggested to me by the latter gentleman, and that I had communicated the fact to him in August, 1833. In the beginning of September, 1833, I informed Dr. Hall of the same, and I subsequently showed him a preparation of the nervous system of the lobster, showing the anterior and posterior columns, which preparation I also exhibited to Dr. Grant on the 21st of November, and on the 25th placed it in the hands of Sir Charles Bell. These circumstances compel me, though unwillingly, to contradict a statement in Dr. Grant's letter (page 719), namely, that when I called on him to show him my preparation of the lobster, "he never looked at it," and that it was he (Dr. G.) who pointed out the motor columns to *me* in his own dissected specimens of that animal. So far from this being correct, I am obliged to state that Dr. Grant *did examine* the preparation, showing me, at the same time, a preparation of the structure discovered by Müller in the scorpion, a structure the nature of which I have alluded to in my paper. Before leaving, Dr. Grant stated that he should like to examine my preparation, and the drawing of it, which I was then showing him, a little more at leisure. But this I did not comply with, since I had promised to present it to Sir Charles Bell.

Before dismissing the subject there is one more circumstance to which I must allude, viz., the charge of plagiarism respecting the inverted position of the chords in the articulated classes, since I was not aware that Dr. Grant considered these views as peculiarly his own, having always understood him to have taught them, with many others, as amongst the common principles of the anatomy of invertebrated animals, and because I remembered having remarked to him, that the ganglia were placed nearest to the exterior of the body, and the motor structure the most internal. With these observations I leave the public to judge how far I have, in reality, been indebted to Dr. Grant for my facts or opinions, while I can but be surprised at the intemperance of his attack.

And now for Dr. Hall. In my letter to The Lancet, Feb. 6, I complained of the omission by Dr. Hall of facts published in my paper in the "Philosophical Transactions," 1831, and of which he could not be ignorant, since he examined my paper in which those facts are described, and which I explained to him on the accompanying drawings previously to its being delivered to the *Royal Society*. If these facts, however, have escaped his memory, he surely cannot have forgotten his having wished me to insert, in that paper, a "note or paragraph," in support of his—but at variance with my own—opinions; and further, that when I positively refused to do this, he threatened me, under the pretext of my being reserved towards him, with a discontinuance of his acquaintance; and when I subsequently offered to insert it as *his, but not as my own opinions*, he declined its introduction altogether.

With regard to the exposure at the *Royal Society* alluded to by Drs. Grant and Hall, I shall here only remark, that I have means of proving that I had been engaged on the subject of the respiration of insects *three* years before I knew Dr. Hall. On communicating the subject of my labours to Dr. Hall, soon after I became acquainted with him, he requested me to make some observations on the respiration of those animals, *in reference to their irritability*, assuring me that they would not interfere with my own; and it was with this understanding alone that I engaged to do so. How far I have derived my opinions from Dr. Hall your readers may infer when I state, that on communicating some of my views to him on the anatomy and physiology of insects, he frequently induced me to *write down* these on paper for him.

Having replied to those parts of the letters which are the proper subject of dispute, I now turn to what I regard the more serious charge of moral delinquency, of intentional deception, and the basest ingratitude; and here I will not pretend to conceal how deeply, I fear I may say how idelibly, these malignant accusations have wounded me; and I trust I shall not be the less believed in this, because my recriminations are not so clamourous, or so vehement as those of my accusers. It has been said, that there are "thoughts that lie too deep for tears;" I can testify that there is a sense of injury too acute for reproaches. My position is one of peculiar difficulty, as well as of peculiar hardship. In my present accusers I recognise those whom I once respected. I *never* concealed, nor wish I *now* to conceal, that I have been under obligations to them; but they have at length exacted a heavy penalty for the debt, whatever it was; the full amount of this debt I now feel myself imperatively called upon to publish. I know not how my statement may be received by Dr. Hall, but I shall think much worse of him than I now do, if he feels no remorse in reading the details he compels me to publish; and I shall have formed a very incorrect judgment of his friends and of my own, and of the members of the profession generally, if the history of our acquaintance is not considered to be at least as humiliating to him as to myself. I attempt not to deny the bitterness of my own feelings on reading the ostentatious display of the benefits he professes to have conferred on me; but those feelings I would rather own than those which I know would be my own portion, had his lot and mine been reversed, and I had occupied the position which he now holds.

To the vindictive epithets applied to me by Dr. Grant, I can only in this place remark, that they are unworthy of a man of science,—that they are as unjust in relation to me as they are illiberal on his part. The full extent of my obligations to him, was permission to attend his lectures and those of his brother professors, on paying that portion of the class fees which goes to the University. I was thankful for his liberality, but need not say that had I thought it possible that a time would come when my acceptance of this boon would have been made a reproach to me, it never would have been accepted.

My obligations to Dr. Hall are not of the same kind; but it is impossible that any one ignorant of them, and who believes Dr. Hall to be a man of veracity and honour, could believe them to be so comparatively slight as they really are, after reading the astounding catalogue of them set forth in THE LANCET of February 17. In refusing to acknowledge some of these alleged obligations I fear I shall be obliged to make use of terms coming nearer than I could have wished to the quality of those employed by my accusers.

I shall reply to the charges of Dr. Hall *seriatim*. As to his having either housed or clothed me, the assertion is false, and Dr. Hall knows it to be so; I never slept in his house, or in any house of which the rent was paid by his money. He never procured clothes of any description for me. As to his having *fed* me, here I plead guilty, in so far as that I occasionally dined at Dr. Hall's house, by special invitations, and also took tea there, when engaged with him in prosecuting anatomical and physiological inquiries. Could I for a moment have believed that when I was accepting Dr. Hall's pressing invitations I was regarded by him as being fed like a wild beast, and destined afterwards to have this published to the world as an obligation? To the other charges, that I *borrowed money of Dr. Hall*, I grieve to say I must plead guilty. On three several occasions I solicited Dr. Hall to advance me *5l.*, and he did so; for the two last sums I gave him a written receipt, and so soon as it was convenient for me to discharge this debt of *15l.* I did so. This is every farthing of money I ever received from him. If the payment has been sought late like Shylock's, it has been, like Shylock's, claimed from near the heart. It ought to be known that, long before the period of this loan, it was offered to me, without solicitation, by Dr. Hall, and that before I asked for it I had spent much time in assisting him in his experiments. The statement of Dr. Hall, that he had procured me a house for many months "*in my distress*," is equally incorrect with the rest; and the designing statement, that the engagement with my pupil was abruptly terminated by my prying into his letters, &c., is equally untrue, since it was broken off in consequence of certain circumstances which *I* need not be the party to state. "On referring," says Dr. Hall, "to my account with Sir Claude Scott, Bart., and Co.," &c.,—had not this statement appeared in print, and with Dr. Hall's signature attached to it, it is impossible to conceive that it could have been made by him. Of course this statement must convey, and must be intended to convey to the reader, the impression that during the long period mentioned I was supplied by Dr. Hall's bounty; and yet what was the real fact? I received not one farthing of his own money during the period mentioned. The monthly payments to which Dr. Hall alludes, were due to me on account of the gentleman who was living with me. It is true that it was through his recommendation that I received this pupil, but it is equally untrue, I believe, that any portion of the money came from the pocket of Dr. Hall. The terms on which I received this pupil were arranged

with Dr. Hall, and the father of the gentleman in question, when it was then determined that I should receive the payments monthly, through the medium of Dr. Hall, on account of his friend, and he gave me cheques accordingly on Sir Claude Scott's bank. The obligation, then, which I lie under to Dr. Hall on this score, which appears, as he has stated it, so vast, amounts to this, that I owe to him the benefit of having had a pupil. Surely there never was such a monstrous practical sophistry attempted to be maintained, and hardly ever I think was there put on record charges more unjust, or more insidious, than those which I have now exposed. I will no longer encroach on your space, but remain, Sir, your obedient servant,

GEORGE NEWPORT.

10, University-street,
Feb. 21, 1838.

ON BENEVOLENT FUNDS AND LIFE ASSURANCE IN HEALTH AND SICKNESS.

By WILLIAM FARR.

(*Concluded from page 704.*)

ASSURANCE of ships has been practised, for several centuries, under the name of bottomry. It does not, however, appear to have been known to the ancients; and one of the earliest records preserved on the subject, is an official regulation passed at Florence, in the 15th century.* Magens has given several early cases of insurance from fire. At Hamburgh the lives of cattle were assured 5½ months, at 10 per cent. on their value. What are called tontines are said to have been introduced into France by Tonti, a Neapolitan, in 1653. The first French tontine was opened in 1663, the second in 1696. For a certain sum paid down, a fixed sum was annually divided among the surviving nominees, classified according to age on entering ("Milne," volume 1). Tontines were financial expedients of the French Government for raising money. Life annuities were resorted to by the English Government for the same purpose in 1694. To raise money by the Act, 5 W. and M., annuities on single lives were sold for 7 1-7th years' purchase; annuities for two lives, for 8¼ years' purchase; annuities on three lives, for 10 years' purchase. No distinction appears to have been made for age. At any age below 60, 7 1-7th years' purchase is low for a life annuity. The credit of the unsettled Government was, nevertheless, so bad, or the matter was so little understood, that, instead of 40,000*l.* worth, 37,732*l.* only were sold. To encourage contributions to the lottery in 1745, every subscriber of 100*l.* was allowed an annuity of 4*l.* 10*s.* on any life he chose to nominate. (Postlethwayte's "History of the Public Revenues.")

Dr. Halley published the first table of mortality in the "Philosophical Transactions," 1693 (Nos. 196 and 198); and showed how the probabilities of life and death, and the value of annuities on lives, may be deduced from it. Halley's was, in the strictest sense, a discovery, but the investigation in the course of which it was made, was probably suggested by Graunt's observations on the London Bills of Mortality, by the communication of a table framed by Dr. Newman, of the births and the ages of all that died in Breslau (1687—91), to the *Royal Society*, and more directly by the English Government then offering annuities for sale.*

The first application of the doctrines of human mortality was vicious; it is well known that they were used to encourage gambling and obtain funds for destructive wars. Life assurance was, at first, nothing but *wagering* on people's lives; it was carried so far at Genoa on the lives of the great, that an edict was passed to the effect that no insurance should be made *sine libertate senatus, super vitâ pontificis, neque super vitâ imperatoris, neque super vita regum, nec cardinalium, neque ducum, principum, episcoporum, neque aliorum dominorum, aut personarum ecclesiasticarum, seu secularium in dignitate constitutarum* (Magens on Insurance, vol. i., p. 33.) The preamble of 14 George III., c. 18, an act still in force, commences: "Whereas it hath been found by experience, that the making insurances on lives, or other events, wherein the *assured shall have no interest*, hath introduced a mischievous kind of *gaming*," and goes on to enact that assurances effected under such circumstances shall be void; that no greater sum shall be recovered from the *insurer*

* See an elaborate Essay on Insurances, by Nicholas Magens, 2 vols. 4to., 1755.

* Halley calculated a table of the value of annuities for every five years of age, at 6 per cent., and observed:—"This shows the great advantage of putting money into the present fund, lately granted to their Majesties, giving 14 per cent. per annum, or at the rate of 7 years' purchase for a life; when young lives, at the usual rate of interest, are worth about 13 years' purchase. It shows, likewise, the advantage of young lives over those in years, a life of 10 years being almost worth 13½ years' purchase, whereas one of 36 is worth but 11 (*Phil. Transactions*, 1693, pp. 603, 604)). Halley's table was one of the most important medical discoveries made in the 17th century; but its importance is only now beginning to be perceived by medical writers. The element of age was neglected by assurers for more than half a century; so slow are mankind in availing themselves of discoveries.

than the value of the interest of the insurer in such life. Magens observed, in 1755, "a great part of the insurances done on lives in London are for, or by, people who have certain expectations in reversion after the death of some friend or relation, whose possessions they have a mind in part to anticipate by this means," (vol. i., p. 33.) This practice sometimes had serious consequences; "a few years' since a London apothecary having got his wife's life insured, soon after killed her."—*Magens.* The common premium on a good life from 20 to 50 years of age, was 5 per cent., and from 50 to 60 years old, 6 per cent. per annum.

LIFE ASSURANCE SOCIETIES.

The Amicable Society, still in existence, is the first English life office of which any notice has been preserved; it was in Serjeants' Inn, Fleet-street, and opened in 1706. All persons in a good state of health and aged 12—45, at the time of admission were assured by paying 10*s.* entrance money, the charges of the policy, and 5*l.* per cent. yearly premiums. The amount of the premiums received each year was divided among the representatives of deceased members. In the 15 years, 1734—48, 106*l.* 5*s.* 7*d.* were divided on an average among those who paid annual payments of 5*l.* The Amicable Society was erected by a Charter from Queen Anne, granted to the Lord Bishop of Oxford and others. The chief view of the enlightened Bishop seems to have been to induce clergymen to save a premium out of their yearly income for assuring their lives.* The Royal Exchange was the first proprietary life office; it was empowered by an act of Parliament in 1720, to insure ships, afterwards to assure lives, and then houses and goods from fire. The proprietors engaged to pay Government 300,000*l.* for their privileges, but were excused on paying 150,000*l.* The capital, 2,000,000*l.*, was subscribed; 500,000*l.* were called for. The company was empowered to grant annuities in 1795. The London Assurance Society received its charter with the Royal Exchange.† The Equitable Society owed its existence to Mr. T. Simpson, who wrote and lectured on the subject. It was established for mutual assurance in 1762. At this time the Royal Exchange and London Assurance offices seldom made any other assurance than that of a single life for one year, which Mr. Morgan believed they generally did on all lives indiscriminately at the premium of 5*l.* per cent. In the first four months 30 assured in the Equitable Society for 5100*l.* To allure the public the 25th policy was raised to the 275th, and the names of Lord Willoughby de Parham and others were held forth as directors, who had not the least interest in its concerns. By 1768 this office had granted 1168 policies, but nearly one half had been forfeited, leaving only 560 in force, each of 250*l.* Its credit was raised by being mentioned by Dr. Price in the "Treatise on Reversionary Payments;" Mr. Morgan was made actuary, and the Northampton Table was adopted in 1781. This Table was known not to be founded on good data; but the graduation of the payments according to age was an immense improvement. The capital of the Equitable Society "begun in obscurity, without capital, and formed on the narrowest scale," now amounts to more than 10 millions; to a policy of 50 years standing, 401 per cent. had been added in 1820. At the present time there are 37 Life Assurance Societies in London. The great extension and improvements of these institutions must be ascribed in part to the providence, and commercial spirit of the British nation, for life assurance is much less common in other countries than in England; but the valuable scientific labours of Halley, Simpson, Deparcieux, Price, Wargentin, Morgan, Milne, Bailey, Babbage, Edmonds, and other writers, have furnished the vivifying influence under which they have flourished.

Life offices have been divided into three classes:—1. Those for mutual assurance which share the profits, having no proprietary; 2, those which share a part of the profits; 3, and offices that take the profits with the responsibility of assurance. The Amicable, Equitable, Norwich Union, and London Life Association have nominally no proprietary; body; and are recommended by professing to share the profits. Societies for mutual assurance would have the strongest claims to support if they could be freed from certain imperfections hitherto inherent in their constitution. (1.) The profits are not divided so as to give to each policy its just claims. In the Equitable only the 5000 policies first on the list now share the profits every ten years. (2.) A few of the most active men get the entire management into their own hands to the exclusion of the majority. (3.) The expense of management is unnecessarily great, and the property is jobbed for the advantage of particular parties. It is said that one person connected with the *Norwich Union* derived no less than 10,000*l.* a year from the Society, and placed a large sum in a relative's hands on bad security. This is an unfavourable sample of the societies that divide the profits *equitably*. The closeness with which the proceedings of the directors are barred from the members, is a radical defect in mutual assurance offices. The calculation of profits are of an intricate nature; the profits to to be divided are sometimes not distinctly

* Postlethwayte: "Dictionary of Commerce," vol. i., p. 150, and "Magens on Insurance."

† "Rees's Cyclopœdia:" article "Assurance."

specified. The accounts should be audited quinquennially by an actuary elected by the members. The data on which the valuation and division of profits are made, might be published, as well as the details of the expenditure, where the managers mean to deal fairly with their members and the public. These objections apply with greater force to the proprietary offices that profess to share a part of the profits, where the same secrecy is preserved, and greater temptation to abuse exists. If assurance companies could easily satisfy the public of their honesty and solvency, those that come into the market, and offer, as mercantile bodies, to assure life on the lowest terms, would be the best. But a man who enters them cannot retrace his steps without suffering great loss; he trusts his money in the company's hands for many years; and the profits that accumulate at first, if dissipated, may leave future contingencies unprovided for. It is well known that some of the most imposing lists of directors have included persons having no real connection with the society; in fact, certain noblemen and men of rank in London did lend out their names on well-known conditions. It is right to add, however, that nearly all the present offices are conducted by men of high commercial respectability.

The life offices assure single lives for a term of years, or for life. A person aged 40 may insure 100*l.* in case of death for one year, by paying 1*l.* 13*s.* 7*d.*; for 7 years, by paying 1*l.* 18*s.* 6*d.* annually; for life, by paying 3*l.* 6*s.* 6*d.* annually. A person aged 29—30 may assure for 100*l.* by paying 13*l.* 17*s.* 7*d.* down, or 2*l.* 9*s.* 2*d.* annually; or by paying 1*l.* 6*s.* 4*d.* during the first 5 years; 1*l.* 12*s.* 2*d.* during the second 5 years; 1*l.* 19*s.* 1*d.* during the third 5 years; 2*l.* 7*s.* 4*d.* during the fourth 5 years; and 2*l.* 17*s.* 6*d.* during the remainder of life. The annual rate may increase or decrease rapidly,—be for life, or for 10 or 5 years; in fact the mode of payment is varied in every way at different offices, each of which gives prominence to some ingenious peculiarity. Joint lives are assured; two persons aged 40, by paying 5 guineas annually, till one drops off, secure 100*l.* to the survivor. A husband aged 40, may assure his wife aged 30, 100*l.* on his decease, should she survive, by paying 2*l.* 15*s.* 4*d.* annually while both are alive. Dr. Price calculated from the Swedish Tables the value of an annuity of 10*l.* a year for the life of a wife after the death of her husband. When the husband's age is 38, the wife's 32, it is 39*l.* 10*s.* at a single payment, or 3*l.* annually. This deserves the particular attention of medical men: the sum is exceedingly low considering the great evils it may obviate. Annuities certain, life, deferred, and reversions are granted; children may also be provided for; and there is but one great class of contingencies that the present offices do not meet. The prospectus of the *National Loan Fund Life Assurance Society*, to which I perceive Dr. Elliotson's name is attached, presents more new features than any of the late prospectuses I have examined. This society proposes to lend members two-thirds of their payments, and thus unite the functions of a saving bank with assurance. It affords great facilities to persons of uncertain income; but it cannot be admitted, as stated in the prospectus, that the plan of the society secures the advantage of a friendly society. Allowing a man to borrow in sickness, the surplus of his own earnings is not *health assurance*.

The premiums of the several offices deserve great attention. They differ widely as will be seen in the annexed tabular example.

Annual Premium for Life Assurance of £100 *on a Single Person.*

	Aged 20.			Aged 30.			Aged 40.			Aged 50.		
	£.	*s.*	*d.*	£.	*s.*	*d.*	£.	*s.*	*d.*	£.	*s.*	*d.*
Equitable,* 1771 .....Males	3	9	4	3	18	7	4	17	9	—		
— .....Females	3	14	3	4	4	4	5	4	8	—		
Since 1781.. Males and Females	2	3	7	2	13	5	3	7	11	4	10	8
Royal Exchange	2	3	6	2	13	3	3	8	0	4	10	9
Sun	1	16	11	2	9	2	3	6	6	4	11	2
National Loan Fund	1	13	7	2	4	4	2	18	8	4	4	2
Britannia	1	12	5	2	0	8	2	15	1	4	1	4
Standard of England	1	10	11	1	19	7	2	13	5	3	18	8
Real Value (4 per cent).....	1	6	5	1	15	1	2	7	6	3	7	4

* The Equitable divides the profits. The Royal Exchange, Sun, National Loan Fund, Britannia, and Standard of England, do not divide the profits at these rates.

It will be observed here that the premiums are considerably above the real value calculated on the Carlisle Table, at 4 per cent. at the age of 40; the addition, by the Standard of England, is only 14 per cent.; by the National Loan Fund, 25 per cent.; by the Sun, 40 per cent.; by the Royal Exchange, 13 per cent.

The value of premiums of Life Assurance depends (1) upon the interest of money, (2) and upon the duration of life; for if instead of paying annual premiums, an assurance of 100*l.* be made by a person aged 40, in a single payment, the rates will vary to the following extent, the mortality remaining as in the Carlisle Table, the interest varying from 3 to 5 per cent. per annum.

Age 40. *Carlisle Table. Present value of a life assurance*, 100*l.*

Interest, 3 per cent.....	£47	3
— 4	38	4
— 5	31	12

The reason of this difference is found in the nature of compound interest. The mean future duration of life, at 40, is 27.6 years, according to the Carlisle Table. But admit that a person is to receive 1000*l.* certain at the end of 40 years, what should he pay down as its present value? evidently a sum which, at compound interest, will amount, in 40 years, to 1000*l.* And this depends on the rate of interest, for 100*l.* will amount, at 3 per cent., to 326*l.*; at 4 per cent., to 480*l.*; at 5 per cent., to 704*l.*; at 6 per cent., to 1028*l.*; at 10 per cent., to 4526*l.* in 40 years. And the following sums, therefore, would nearly amount to 1000*l.* at compound interest, in 40 years.

The rate of interest being—

3 per cent.	£307	would amount	to	£1000
4	do.	208	do.	1000
5	do.	142	do.	1000
6	do.	97	do.	1000
10	do.	22	do.	1000

This being merely an illustration, fractions have been omitted.

In calculating the premiums of assurance, it has been all along assumed, that the interest of money did not exceed 3 per cent. Now, when the interest of money was 5 per cent., a person aged 40, would pay, on this ground alone, 47*l.* 3*s.* instead of 31*l.* 12*s.* for a policy of 100*l.*, or 49 per cent. above its real value. At earlier ages the excess would be greater.

The rate of mortality is the other element on which the premiums of life assurance depend. A person, aged 30, and promised 1000*l.*, if he be alive 23 years hence, is well aware that this is a very different thing to receiving 1000*l.* on the spot; for he may die and never obtain a farthing. Still he has a chance of obtaining 1000*l.*, and the chances are greatly in his favour. Three out of four persons alive at 30, survive 23 years; and where four are all the chances of winning 1000*l.*, each chance is worth 250*l.*; a person holding three of them, as a person aged 30 does, is supposed to possess the present value of 750*l.* The *uncertainty* of possession reduces the value of 1000*l.* to 750*l.* If two only of four alive at 30, survived 23 years, the value would be reduced to 500*l.* Laying aside, for a moment, the consideration of interest of money, a person, aged 30, may, for 250*l.*, assure 1000*l.*, should his death happen within 23 years; where one in four only dies, he has but *one* chance in four of obtaining this sum; but if two in four die, he must pay 500*l.*—double the former premium—as he has double the chance of gaining. The higher the mortality, the higher the premiums; the lower the mortality, the lower the premiums.

Three tables have been in general use in this country, the Northampton Table, the Swedish Table, and the Carlisle Table; the two former calculated by Dr. Price, the latter by Mr. Milne. The mortality is highest in the Northampton Table, lowest in the Carlisle. The Northampton Table is not constructed on accurate principles, and Dr. Price distinctly stated and proved that it exaggerated the mortality, particularly in the middle and early ages.* The Swedish and Carlisle Tables are properly constructed. A great number of English life offices adopted the calculations of Dr. Price and Mr. Morgan, made from the Northampton Tables for the Equitable Society, with inconsiderable alterations. Little has been said about the low rate of interest on which the calculations have been based, while much noise has been made respecting the tables of high mortality. The subjoined comparison shows the relative importance of the two elements.

Present value of a life policy of 100*l.*, *on a person aged* 40.

	Carlisle Table.	Northampton Table.
Interest, 3 per cent.	£47 3*s.*	£53 16*s.*
Do. 4 do.	38 4	45 8
Do. 5 do.	31 12	38 17

Here the difference produced by three rates of interest is more than 15*l.*; the difference produced by the tables of mortality, when the rate of interest is 4 per cent., amounts, at the age of 40, to a little more than 7*l.*

Present value of a life policy of 100*l.*, *age* 40.

Carlisle Table - - -	£38 4*s.*
Swedish Table (Dr. Price's) -	42 4
Northampton Table - -	45 8

It does not follow that the societies employing the Carlisle Table demand premiums lower in proportion, as they often add 30 or 40 per cent. to the calculated premiums. This is preferable to employing incorrect tables; but the public should not be misled by words when the things themselves are unchanged.

* "Observations on Reversionary Payments," &c. 7th ed., vol. 2, p. 411:—"The assurances on single lives, required by the Equitable Society (Northampton Table), are, in many cases, above a *third*, and, in general, above a *quarter*, greater than the true value for *mankind* at large, deduced from the Sweden observations."

Duvillard's table is used in France; it errs in the same way as the Northampton Table. Süssmilch's German Table was formed on the deaths alone. Dr. Wigglesworth constructed the table in use in the Northern states of America*; it represents the expectation of life as 30.25 years, at the age of 30, when the expectation of the Northampton Table is 28.8, of the Carlisle Table 34.5 years.

While the Carlisle and Swedish Tables represent the mortality of their respective populations correctly, and have earned a well-deserved fame for their authors, it is now well known that they do not present the true law of mortality for selected lives. Of 5075 entering on the 41st year, only 5009 should survive that year; 66 should die in the year, according to the Carlisle Table. Now, experience has shown, that of 5957 new annuitants, or persons assured at that age, half that number do not die in the first year. The mortality depends on the period of admission, as well as on age. The reason is obvious; the 5957 aged 40, taken in a population indiscriminately, include 130 sick persons, besides other "bad lives," that would not be assured. It is, therefore, to the discrimination of the medical officers and the medical referees, and to the rejection of the unhealthy, that the aggregate mortality of members is lower even than the mortality of the Carlisle Table.† Between the ages 40—45, persons assured at the age of 40 in the *Equitable Society*, died at the annual rate of 1.07 per cent.; when assured at 35, at the rate of 1.27 per cent.; when assured at 30, at the rate of 1.39 per cent.; thus approaching nearer and nearer the mortality in Sweden, which (1811—30) was 1.506.* The mortality of annuitants and holders of life policies is much lower at first than the mortality of the common tables; and this is in favour of life offices, as it allows the interest of premiums to accumulate. In assurances for short terms it is the source of great profits.

For much valuable light on the influence of *selection*, and the mortality of assured lives, the world is indebted to a publication by the Equitable Society, where Mr. W. Morgan, the talented Actuary of that Society, distinguished the lives entering at each age, and following each class, noted, year by year, the number remaining, withdrawing, dying. In the Government Annuity Tables, constructed by Mr. Finlaison, this distinction was not made; a healthy person buying an annuity at the age of 80, was supposed to live no longer than a person aged 80, that had been healthy on purchasing an annuity at the age of 20, or 60 years ago. Acting on this error Government lately lost 300,000*l.*—500,000*l.* by the sale of annuities. Government will probably be induced to publish the observations on the lives of pensioners and annuitants in their possession, in proper form, and this, with the experience of the Equitable Society, will enable actuaries to calculate tables of mortality for lives selected at different ages. Till this is done, the tables of Milne and Deparcieux may be used.†

LIFE ASSURANCE IN SICKNESS.

It has been already stated, that only healthy persons can assure at the present offices, or if persons labouring under any chronic disease do insure, it is at unreasonable sacrifices. The premiums are arbitrary.

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* Mem. of the American Academy of Arts and Sciences, vol. i.

† More professional skill and care are required in the diagnosis of health than in the diagnosis of many diseases. Therefore the medical referee is entitled, in such cases, to remuneration; and therefore he should never give his opinion unless the ordinary fee which he claims in other cases, be forthcoming. The medical selection of lives is the source of stability in offices where the premiums are low; it is the source of enormous profits where the premiums are high. The old London life offices have realised many million of pounds sterling by the gratuitous services of men who have left widows without a home, children without bread. One word more. The life offices are interested in paying the medical referee: it is the only way of making him directly responsible for his opinion. The fee will unquestionably come ultimately from the pocket of the assured; but it should be paid by the parties demanding the opinion, and charged on the policy, or included with the expenses of management, in a slight addition to the premium.

* From a table by Mr. Morgan, in "Tables of Persons Assured in the Equitable Society." The agreement between the Carlisle Table, Mr. Morgan's table A, formed from the persons assured in the Equitable Society, Deparcieux's Table of French Annuitants, and Mr. Finlaison's Tables of Government Annuitants, so far as regards the expectation of life, is remarkable. In comparing these it must be borne in mind, however, that "age 40" in the Carlisle Table corresponds to 40½ in the Table of Annuitants, and to 39½ in Mr. Morgan's table. Mr. Milne's confidence in the Carlisle Table was, no doubt, strengthened by that of Deparcieux, previously published.

† See an important paper on the mortality of the Equitable Life Assurence Society, by Mr. Edmonds, LANCET, Oct 21, 1837. Mr. Edmonds has also published three tables of mortality, and the value of annuities at all ages. The tables are founded on the law of mortality he has discovered.—*Life Tables*, 1832.

Indeed, with ordinary tables, an office is necessarily restricted to healthy lives, for if it admitted diseased persons, they would apply in such numbers as would ruin the society, unless its premiums were raised above the pitch required for ordinary lives. But there is no reason whatever why persons labouring under acute or chronic diseases should not assure, since the mortality of persons suffering from different diseases may be determined as accurately as the mortality of select lives; nay, more accurately, as the time of observation required is shorter, and the diagnosis of disease is not more difficult than the diagnosis of perfect health. Nothing but the want of data, which may be collected without much difficulty, can prevent the assurance of cases of every kind of disease. I will take an extreme instance. Twenty persons are attacked by true Asiatic cholera; the mortality is 50 per cent. Each person places 50*l.* in the hands of an office, on condition that 100*l.* shall be paid to the representatives of the 10 that die. Here 1000*l.* are deposited; 10 sums of 100*l.* each are placed in the hands of the widows and children. The mortality of natural small-pox in cities is nearly 25, 33, 44, 60 per cent., at the ages 10—20, 20—30, 30—40, 40—50. Four persons are attacked at each interval of age; each assures for 100*l.*, by paying the premiums 25*l.*, 33*l.*, 44*l.*, 60*l.* If the patient, aged 20—30, survived the 20th day, his premium would be lowered to 8*l.* 14*s.* It would, also, vary for males and females, and different forms of the same disease; distinct and confluent small-pox would have each a properly adjusted premium. Malignant and petechial cases could not be assured. Each disease may be dealt with in the same manner. An office undertaking assurances of this kind would require a special certificate for each disease from the medical attendant, for which he would be remunerated, and employ a medical officer to see the patient two or three times; in claiming the premium the medical attendant would send in a report of the case. Persons assured would have the best possible guarantee that the case was understood, and treated with care and skill; no small recommendation to the public. Persons labouring under pulmonary emphysema, chronic diseases of the heart, insanity, epilepsy, rheumatism, gout, malignant tumours, may be assured at rates regulated by their mortality. A table of mortality in consumption has been inserted by Sir James Clark, in his "Treatise on Pulmonary Consumption," p. 167. A person doomed to immediate, inevitable death, whether by disease, or violence, cannot be assured. The value of money depending on a certain event is not affected by that event; but all acute diseases from which a given proportion recover, admit of assurance. Wherever there is uncertainty, and the degree of uncertainty can be determined, this will regulate the premium of assurance. The death of a healthy man is inevitable; the time within which it will certainly happen can be named; but the time itself is uncertain; and as the time at which death will most probably happen can be determined, the lives of persons now healthy are insurable. In like manner the death of a person labouring under a specific disease will inevitably take place; the precise time is uncertain; the probable time can be determined; the lives of persons now sick are, therefore, insurable.

The lives of persons affected by chronic disease could be assured from tables constructed like tables of *selected* annuitants, except that the *selection* would turn on the disease, not on the health of the subjects. Assurance in acute diseases would be still more simple. It would be well, perhaps, to assure the life of the patient for the ensuing year, which would but slightly increase the risk and premium.

Sick persons are now altogether excluded from the advantages of life assurance. Great numbers would be glad to assure, and pay the required premiums, if they were offered this facility. A man has had rheumatism and pericarditis; hypertrophy of the heart follows, a fixed income depends on his existence, but he can assure nothing to his family in the event of death. A consumptive person will inherit a large estate if he survive six months; his life cannot be assured. A man is attacked by small-pox; the payment of a debt depends on his recovery, a contingency which life assurance would meet. If the mean duration of any class of sick lives was determined, they might be run against other lives, where this was desirable. But the principal value of life assurance in sickness will be exemplified by the following case. Dr. M. obtained 1500*l.* a year by his practice; he had not realised that income two years; and after paying off some earlier incumbrances had not a surplus of 500*l.* He was attacked by fever; his friends entertained hopes of recovery; but the disease proved fatal in a week. His wife and three daughters were left with 500*l.*, their only dependance. The fever only destroyed 1 out of 10 attacked at his age, consequently, Dr. M. may have assured 2500*l.* in the event of his death, for 250*l.* laid down at the commencement of the attack; and would no doubt gladly have done so, had it been practicable. Again, a man has been mad and recovered; he is liable to a future attack, and, although the contrary has been stated, insanity is a dangerous disease. This man is engaged in arduous professional duties; it is possible, and is it not desirable, that his life should be assured? Assurance would silence many fears, and deprive the serpent in his mind of its most poisonous tooth.

A great many persons put off life assurance till it is too late; this plan would open a door for partial escape and repentance.

Until the greater part of the sick population are brought within the pale of life assurance, medical science will not have rendered all the service it can perform to society. And it is gratifying to reflect, that in recording facts with this view, medical observers will be contributing most effectually to the progress of the science and practice of physic. Baron Froriep, who, in a pamphlet I hold in my hand,* strongly urges the utility of life assurance in sickness, shows that much valuable information may be procured from the registers of hospitals. Baron Türkheim, of Vienna, at the meeting of German naturalists and physicians, in Jena, promised to institute researches in the hospitals and poorhouses of Vienna, on the influence different diseases have on the duration of life. The Council of the *Provincial Medical Association* has undertaken the subject of hospital statistics; the able paper by Dr. Cowan, in the last volume of "Transactions," is a proof of their good intentions. We may, therefore, hope for much information from the hospitals.

I hope shortly to bring the subject of the "Statistics of Private Practice" before the Council of this Association, and to show how all the information required for life assurance in sickness, can be derived from this source.

MEDICAL SOCIETY OF LONDON.

Monday, February 19, 1838.

Mr. Bryant, President.

SMALL-POX AND VARICELLA—LEPRA VULGARIS, AND ITS TREATMENT.

Mr. Dendy related a case to prove the non-identity of variola and varicella, an opinion long entertained by some pathologists, but respecting which he had not made up his mind until after the present occurrence. In the case mentioned, variola appeared in two children just as the varicella was leaving, which latter affection did not render the system free in any way from the small-pox. One curious circumstance, which he could not explain, attended the variola in one of these children, who had all been vaccinated. This peculiarity consisted in a blush of variola being present round the vaccine cicatrices. He could not understand what predisposing cause to take on this increased action existed in the vaccine marks.

Mr. Liese could not, at the moment, call to mind any individual case in which he had seen variola after varicella; but that such instances had occurred in his practice he was quite certain. The efflorescence round the vaccine cicatrices, in Mr. Dendy's case, was an entirely new fact to him, and he could not explain the cause.

A paper on Lepra Vulgaris, by Mr. Bishop, was now read to the Society. The Essay consisted of a good practical treatise on the disease in question, but offered only one or two points which were in any way novel. The author commenced by remarking on the variety of opinion which had existed regarding lepra vulgaris—its causes and treatment. Regarding the causes, the author was more inclined to the opinion of Bateman, that they depended on atmospheric changes, and exposure to moisture, than to any other; and regarding the treatment, he had found the best external application the ung. hydrarg. nitrat., and the preparations of arsenic, the most beneficial internal remedies. Out of a number of cases which the author has treated by these means, he briefly alludes to two. The first of these is that of an old lady, sixty years of age, who, until the year 1827, had always enjoyed good health. Having in that year been wet through after taking much exercise, she was shortly after seized with tingling and itching of the skin in various parts; these symptoms were succeeded by the eruption characteristic of lepra, at first only in isolated patches, but subsequently spreading until it covered the entire surface. He saw her first at the end of three years from the commencement of the disease, which, up to that time, had resisted all means of cure. He found her covered with scales, much emaciated and exhausted, with a red tongue and conjunctiva, and confined bowels. He prescribed the following mixture:—

A drachm of the liquor arsenicalis;

A pint of compound decoction of sarza; a wineglassful three times a day. A Plummer's pill at night, and an occasional saline purgative. The citrine ointment was applied externally to the edges of the scales. In the course of six months, by continuing steadily with these means, there was a very remarkable difference in the appearance of the disease, and in the health and strength of the patient, the body now only showing isolated patches of the eruption, and in twelve months the patient was convalescent. The second case was that of a female servant of the last patient, who believed she had contracted the disease by occasionally using her mistress's hair-combs. On one occasion she pricked her head with one of these, and the eruption soon after appeared near the wounded part, and subsequently spread over the head and body.

* Ueber Lebens Versicherung's-Anstalten-Bemerkungen von Medicinischen Standpuncte, Mitgetheilt von Dr. S. F. v. Froriep, Weimar, 1837.

Similar means to those employed in the last case were resorted to with like success, the only difference in the remedies consisting of her taking the arsenical solution in her tea instead of in the decoction of the woods.

The author thinks he has established several facts by his experience in cases of lepra. The first is that of the power of transmitting the disease by inoculation, though it is not communicable by simple contact. Secondly; that it is generally at least six weeks before any perceptible relief is obtained from the use of the arsenical solution in chronic cases, and that, to remove the disease, this medicine must be given for many months, gradually increasing the quantity. He considers, also, that many practitioners have failed to remove the disease by arsenic, by not continuing it long enough; and he says that arsenic may be continued for a very long period without any fear of disordering the stomach or bowels, when it is copiously diluted with decoction of sarsaparilla, or of dulcamara.

Mr. Hooper related a case of lepra vulgaris, the most obstinate and severe he had ever seen, which resisted all remedies employed, but eventually gave way under the employment of the arsenical solution for a period of six months.

Mr. Leese detailed the case of a young lady, twelve years of age, who had lepra vulgaris. The plan he pursued with success, was the administration of a Plummer's pill at night, with four or five minims of the arsenical solution three times a day. The external application he had found useful in this case, was the common yellow wash of the hospitals.

Mr. Procter considered skin diseases usually as mere indications of something being wrong in the constitution, and, therefore, requiring constitutional remedies. Local applications he did not consider of much service.

Dr. T. Thomson thought, with the last speaker, that cutaneous diseases were generally the result of some disease of the stomach, or of the vascular or nervous system. Regarding the causes of lepra, he did not think the first case related in the paper had been produced by the exposure to wet, &c. He thought the disease in question was most frequently the result of a great impression made on the system by change of diet, anxiety of mind, or by some injury done to the brain or spinal chord. Regarding treatment, he was always anxious not to employ arsenic at first. He had generally found the liquor potassæ, given with other medicines, effectual. In old obstinate cases, bleeding occasionally assisted in performing a cure.

Mr. Dendy, in allusion to the contagion of lepra by inoculation, considered the case related in the paper of the occurrence of the disease, in the servant who punctured herself with her mistress's comb, was a mere coincidence, and not a consequence of the accident. No plan of treatment to be adopted in every case could be laid down; the external disease was merely indicative of what was going on in the system; all the collateral circumstances of the case, as well as the eruption, were to be taken into consideration; that which agreed with the patient was likeliest to cure the disease.

After a few words on the properties of arsenic, in which Mr. Procter spoke of the great liberality of the Poor-Law Commissioners, in whose salaries to medical men no allowance for the use of quinine was made, the Society adjourned.

WESTMINSTER MEDICAL SOCIETY.

Saturday, February 17, 1838.

Mr. Hale Thomson, President.

INFLUENCE OF VACCINATION ON VARIOLA.—STARVATION FROM VOMITING.—CREOSOTE, AND ITS USES.

Mr. Streeter said, that the female, whose case had formed the subject of a paper he had read at a late meeting of the Society, on the above subject, had since been suddenly but safely delivered of a live and healthy child, which showed not the slightest trace of small-pox marks upon the skin, the variola of the mother did not, therefore, affect the infant. In the case mentioned by Rayer, the child caught the disease and died. Mr. Streeter had attempted to vaccinate the infant in his own case, by making four vaccine punctures with recent, moist, and proper lymph; but it did not take. Vaccination was again tried with lymph twelve days old, but this had also failed. He said he should try the proceeding again with recent lymph, the result he should communicate to the Society. In ordinary cases he had succeeded in producing proper vaccine vesicles in the first week. In reference to the influence of vaccination over small-pox during the incubation of the latter disease, Mr. Streeter related the following case:—An infant had been in company of a patient affected with small-pox, and consequently exposed to the contagion. Three days afterwards it was vaccinated, and the result sufficiently proved that the vaccination arrested the progress and modified the presence of the small-pox.

Mr. Costello inquired whether there was any rupture of the membranes and escape of ammotic fluid, in the case recorded by Rayer, at the time the fœtus had small-pox in utero. If the case had been complete in this respect, it might perhaps be useful, taken in connection with an observation of Chomel,—that a prolonged warm-bath at the maturating period of small-pox, tends to ripen the pustules, and by rubbing the surface afterwards with a rough towel, the

matter from them escapes on it, the pustules subsequently will cicatrise. Probably the prolonged warm-bath which infants enjoy in utero, had some influence on the pustules.

Mr. BRUMSGILL mentioned a case, in which vaccination was performed in a child, on the fifth day of incubation of variola; the small-pox was much modified.

Mr. STREETER said, it was a well-established fact, that vaccination performed three days after exposure to small-pox, and even possibly as late as the fifth day, might modify and even anticipate small-pox; but it had never been known to be of any avail if small-pox eruption should appear prior to the areolar stage of the vaccine vesicle; or when the variola had got the start of the vaccinia.

INCESSANT VOMITING DURING PREGNANCY, ENDING FATALLY.

Dr. J. JOHNSON wished to ask if any member had known vomiting, simply dependant upon the pregnant state, productive of fatal results. A lady, thirty years of age, soon after marriage ceased to menstruate, and became affected with morning sickness, which symptoms were naturally enough attributed to pregnancy. The sickness, however, gradually became worse, and at last nothing of any kind could be retained on the stomach. Skilful examination failed to detect the presence of pregnancy. Something like induration was thought to be present in the region of the pylorus, and it was concluded that the sickness was not to be attributed mainly to the pregnant state. The sickness and extreme emaciation were the only symptoms present. After death, no morbid appearances were observable in any part of the body. The uterus contained a fœtus about four months old. This patient was literally starved to death, and would, indeed, have sooner fallen a sacrifice to the sickness, had she not been supported by means of enemata consisting of milk and nutritive broths, with opium. The treatment pursued consisted in the use of various salines, anti-emetics, counter-irritation at the epigastrium, leeches, and acetate of morphia sprinkled over a blistered surface; the last gave temporary relief.

Mr. HASTINGS had seen creosote of great benefit in many cases of sickness. In sickness dependent on pregnancy, he had only known it to fail on one occasion, in all other cases it afforded instant relief.

Mr. HARDWICKE having seen creosote much employed, could confirm the remarks of Mr. Hastings. In five or six cases, in which vomiting had existed for periods varying from a week to three months, all food being immediately rejected, and in some of the cases great emaciation produced, creosote not only relieved the sickness and nausea, but enabled the stomach to retain food easily; but the doses required to be gradually increased. In one of the above cases the sickness depended on pregnancy; in the others it occurred in young girls, and was connected with functional, nervous, or hysterical symptoms. It was such cases that were chiefly benefitted by creosote.

Mr. W. CLARKE had also seen vomiting relieved in many cases by creosote.

Mr. COSTELLO mentioned a case, in which obstinate and long-continued vomiting, during the pregnant state, had produced great emaciation. In this instance, the only means which were found of any avail, consisted in venesection; this effectually stopped the sickness, and the patient went her full time.

Dr. BURGESS had seen a case, similar in many respects, to that mentioned by Dr. Johnson. This case occurred in the practice of the late Dr. Hamilton, but death did not take place until after the birth of the child, which only survived four months. All remedies in this case proved ineffectual.

Saturday, February 24, 1838.

VACCINATION.—PLAN FOR KEEPING THE THAMES WATER FREE FROM IMPURITIES.—WATER FILTER.

But little worthy of being recorded occurred in the Society this evening. Some desultory conversation, respecting certain points regarding vaccination, took place; but nothing in addition to what transpired last week was brought forward. As there seemed no disposition on the part of members to start any new subject, after a long pause,

Dr. JOHNSON alluded to a plan which is contemplated, of keeping the Thames water pure, by a Company which has been established in the metropolis. The scheme was originally that of a gentleman named Kendall, and was first planned ten years ago, but had only within the last year or two been prosecuted with a view to carry it into operation. The outline of the scheme consisted in the formation of a number of tunnels in the various parts of the metropolis, which were to convey the fæcal matter from the various houses to a common current, which was to be formed on the banks of the Thames, the water in that river being thus kept from the impurities of this kind of filth. There were also to be large reservoirs on the outskirts of the metropolis, for the reception of the ordure, and in which the more fluid parts might be evaporated. The manure thus formed was to be sold to the gardeners and agriculturists by the Company, and, it was considered, would bring in a large revenue. The Company had collected various important facts from the Continent on the subject; it was found that in various continental cities,

but particularly in Paris, the ordure collected and sold was a source of considerable profit to the authorities. He thought that in some points the calculations of the Company were fallacious. On the Continent, little water passed into the cesspolls or water-closets, while in this country large quantities of water were used, so that one-half of the fæcal matter would be dissolved, and rendered incapable of being collected at the mouths of the cloacæ.

Dr. WILLIAMS thought if the Society took up the subject before them, it ought to be in reference to its effects upon the health of the community. Difference of opinion might exist respecting it, and if regularly discussed in that Society, the plan might meet with many supporters; however, he thought the large extent of surface which would be required for the evaporation of so much fluid as would be collected, would render the plan difficult, unless some of the water was drained off. Regarding the use of the ordure to the agriculturist, its benefit to the land, in some instances, might be questionable, for though poor soils were much improved by the addition of manure, richer ones, particularly if they were clayey, would be injured by it in some of their productions; for instance, it would increase the quantity of potatoes in such a soil, but would materially deteriorate their quality; hence the public would suffer. The idea of continually feeding on the product of feculent matter was revolting. Respecting the effects of the evaporation of the liquid upon the atmosphere, the result of the opening of a drain or cesspool, on some occasions, was well known; and he thought the large collection of ordure would be sufficient to produce much disease in the same manner in a great part of the metropolis.

Mr. COSTELLO said, that in the neighbourhood of Paris there were large public cesspools, in which the ordure of the whole city was deposited. The ordure was removed at night in carts to these receptacles, from whence it was constantly being taken for the purpose of manuring the land. The stench from these receptacles, which were situated on a high ground, was almost intolerable to those not accustomed to it, and might be detected, when the wind was in the right quarter, at the distance of thirteen miles. Commission after Commission had sat to inquire into the effect of these receptacles upon the public health, and the conclusion come to was, that they exercised no bad influence upon it. Regarding the purity of the Thames water he might mention, that he had seen an apparatus for filtering, by which, in twenty minutes, as much water might be rendered perfectly pure as would fill a common-sized lock in a canal; this apparatus had been offered for sale to the various Water Companies in London, and none of them would purchase it!

UNIVERSITY COLLEGE MEDICAL SOCIETY.

CASES IN WHICH THE VENA CAVA SUPERIOR WAS TOTALLY OBLITERATED, PRODUCING ŒDEMA OF THE UPPER AND LOWER EXTREMITIES.

At the last meeting of *University College Medical Society*, Mr. HARDWICKE detailed two cases in which he had observed the above-mentioned lesion, arising from the pressure of tumours in the mediastinum. The first case occurred in a middle-aged man, who had œdema of the legs, face, and upper extremities, particularly on the right side, all of which, however, completely subsided some weeks before his death. The subcutaneous veins of the thorax and the abdomen were very large and turgid; a tumour, about the size of a hen's egg, existed on the right side of the sternum. Respiration was wanting, and percussion was dull at the upper part of the right thorax, but healthy below, and on the left side. He died after six months illness. After death there was found, in the upper part of the thorax, towards the right side, a tumour, corresponding to the external one, but much larger. It inclosed and obliterated the trunk of the superior cava, and involved the upper part of the lung and pleura on the right side. Some of the mesenteric veins were much dilated.

The second case occurred in a female who also had œdema of the face and right upper extremity, and some, also, about the ankles, with extreme turgescence of the jugular and other veins. A tumour was observed projecting from, and filling up the subclavicular fossa of the right side; extensive dullness on percussion, and want of respiratory murmur, indicated great effusion into the right pleura. In this case a large tumour was found situated in the upper part of the thorax, compressing and completely obliterating the trunk of the superior cava. The right bronchus and pulmonary veins were also compressed; the arteries which passed through the tumour were not affected. The right pleura was nearly filled by serous effusion, and the lung pushed to the upper part of the thorax. Small tumours were observed in other parts of the body. The appearances in the abdominal viscera indicated obstructed venous circulation. Mr. Hardwicke made some remarks on the condition of the venous circulation, and the circuitous route the chyle would, of necessity, have to take before entering the pulmonary and arterial circulation.

DIGEST OF THE

MEDICAL EVIDENCE

DELIVERED BEFORE THE

POOR-LAW COMMITTEE OF THE HOUSE OF COMMONS.

IN 1838.

E. GULSON, Esq., again examined, Feb. 19th, 1838.

1676. CHAIRMAN. You are conversant with the medical relief under the new law?—I am.

1678. Have you observed anything, either in the law or the rules of the Commissioners, which, respecting medical relief, appeared to you to require alteration?—I have not; I think the best has been done that circumstances would permit.

1679. Under the 54th clause of the Act, in all cases of emergency, or sudden and urgent necessity, medical relief may be granted by the parish officers?—Decidedly.

1680. Independently of the paid officer of the union?—Certainly, and is done to a great extent, or it may be given by any justice of the peace, whether the sick person be settled in the parish comprised in the union or not.

1683. Under the rule where relief in money is forbidden to any able-bodied male pauper who is in employment, is not an exception made in case of the illness of that pauper?—There is. The board of guardians under the 42nd clause have the power, in any extreme case, of infringing the Commissioners' rules, reporting to them such infringement, and I have never known the Commissioners to object.

1693. The authorities by which medical relief may be given to the poor appear to be the churchwardens and overseers, the justices of the peace, in particular cases, the relieving officers, and the board of guardians?—Yes; and as a portion of those did not exist under the old law, and as every officer that did exist under the old law still exists, the poor are better off in that respect than they were before.

1697. If the visits of the relieving officer to the parish be only at particular intervals, cannot the pauper apply to the parish officers or to a justice of the peace?—Yes.

1699. What are the measures, when you begin to form an union, which you generally adopt for providing medical relief?—I have generally advised the guardians to appoint a committee, acquainted with the localities, and the residences of the medical men, to draw out such districts as they thought most convenient; and I have generally left it open with the board whether they will fix a certain sum, and divide it among the medical districts, or put it out to tender.

1700. Have you very much recommended either of these courses?—In the highly-pauperised districts of Berkshire and Oxfordshire, in which I was first employed, I recommended, decidedly, tender, because we found it difficult to fix a sum; but in Nottinghamshire and Lincolnshire I think it has been left to the guardians to do that which they thought best.

1701. In Oxfordshire and Berkshire was there any indisposition on the part of the medical men to give in tenders?—In some instances that was the case.

1702. What was their objection?—I think they did not like to bid one against another.

1703. Was it the *practice* of the guardians always to take the lowest tender?—Decidedly not; and I always made it a condition in the advertisement that they did not engage to take the lowest tender. I have always advised the guardians not to place the poor in the hands of any man whom they would not like to have attending themselves.

1705. Was the result of the tender to take strangers?—Generally speaking, strangers were not introduced; the introduction was quite the exception; and the medical men in the neighbourhood made the tenders and were accepted.

1707. Did you hear much complaint among the medical men as to the amount of remuneration under the tender?—Yes; because in that part of the country which had been highly pauperised the amount of remuneration was certainly less than it was before.

1708. Was the amount of remuneration *relatively* less in proportion to the number of cases they were called upon to attend?—I think not; and I am justified in saying so, by finding that since I have left, in one or two of the unions, where the workhouse system has been adopted, the amount has been very much lessened, in consequence of the adoption of the per-case system, from that which I advised the guardians to give.

1709. The amount not having been relatively diminished, must arise from a smaller number of paupers being brought within the sphere of parish medical relief?—Partly so, and partly from the mode in which, under the old system, medical relief was afforded; the medical man, under the old system, rode over the ground of other medical men: for instance, suppose that in any given space there were twelve parishes, perhaps six would belong to one medical man, three to another, and three to a third; the medical man having six perhaps had to ride over the remaining six to get to his work, and the medical man having three had to ride over the other nine to get to his work; under the present system, the area for which a medical man engages to attend is a compact one.

1710. You think, therefore, that great convenience has arisen from the union being

divided by guardians into separate compact medical districts where the parishes are not separated from each other?—I do.

1715. With respect to the diminished number of paupers attended by medical men, under the new system, to what extent has that been carried?—I do not think, in the pauperised districts that have come under my notice, that one-half are attended that used to be, owing to their providing themselves with medical attendance.

1717. Do their earnings enable them to provide medical relief?—I think the tendency of the Act is to raise wages, and where the wages were so low that they are raised the man is better able to provide himself with medical attendance. Formerly, almost every labourer, whether in good circumstances or bad, obtained medical relief. The whole labouring population in Berkshire and Oxfordshire, might be said to be medically pauperised.

1721. Do you think that the relieving officers and guardians exercise the discretion of granting medical relief humanely?—Decidedly so; very liberally; and I would wish every board of guardians in the district which I superintend, to be more especially liberal in that respect than in any other.

1724. Under the former system was not a large expense incurred by parishes under "suspended orders of removal"?—Yes, I could adduce extraordinary instances of that; I know one in which a medical man took a district, in which, on the average of two or three years, there were 800 paupers, heads of families, resident; he took it for 40*l.* (under the old law), being 1*s.* per head on the average, and in the first case that came under his notice, after that contract, a non-resident pauper (not belonging to them, and for which he had the power of making out his bill), he charged upwards of 17*l.* for it, and, upon being expostulated with, he said that that was the way in which he must, of course, pay himself for the contract which he had before taken.

1726. Lord Howick. Did not the parochial authorities sometimes connive at this abuse in order to obtain medical assistance for their own poor, at the expense of other parishes?—I believe so.

1730. You have spoken of tender; explain the advantages of medical remuneration by fixed salary?—When you have made a contract at what the guardians consider to be a fair amount, and you find that the medical man is doing his duty satisfactorily, that man ought to have a decided preference as to the continuance of his contract.

1731. Do you think that a fixed salary is more acceptable to medical men than that by tender?—I do; nevertheless, the tender has been very frequently a good plan in the first instance, to ascertain what we can fairly get it done for, and then we can make a continued contract, having thus ascertained what, in the opinion of the medical men, being themselves competent judges, their remuneration should be.

1734. Upon what principle do you advise, in the case of fixed salary, the guardians to determine the amount?—I look to the number of paupers in the district, and the distance which the paupers lie from the medical man. I have, in some instances, formed an estimate, not of the paupers, but of the total population within the district, as well as other data; but the fixing a certain sum in the first instance has always been attended with so much difficulty, it is so difficult to find data upon which to calculate, that we have generally resorted to the tender, let it settle itself in that way, and then continued those medical men who do their duty and like their contract.

1736. In the district under your superintendence, what is the remuneration of the medical men?—According to the amount of pauperism; for instance, it was very much greater in Berkshire, Oxfordshire, and Nottinghamshire, than what it was in Lincolnshire. For instance, also, before the Union of Sheffield was formed, I found that they had contracted, satisfactorily both to the medical men and themselves, for the attendance upon the township of Sheffield, containing 60,000 inhabitants, for 100*l.*

1738. Mr. Wakley. When was that?—For the last five or six years; but in such a population in Berkshire or Oxfordshire we should have had to give 700*l.* or 800*l.*, if not 1000*l.*

1740. Chairman. One of the most important elements of the calculation in this matter must be the distance which the medical man will have to travel?—Decidedly.

1741. What do you think of remuneration per case?—I have never tried it. On my first going out upon the service this matter pressed on my attention immediately; and I happened to have a very intimate friend, a physician of considerable eminence, whom I consulted, and he put into my hands several works on the subject; and I was to a considerable extent guided by his opinion, but as I gained experience I was enabled to meet difficulties, myself, which beset me at first.

1742. A system of remuneration has been adopted in some parts in the nature of a medical club?—Yes; and as all the unions under my charge come fairly into operation, I decidedly endeavour to establish medical clubs.

1743. I did not refer to self supporting ones, but to the system which has been established in parts of Essex and Cambridgshire, in which medical relief was given to paupers under the form of a medical club?—I have never seen it in operation.

1745. Medical relief has, in fact, since the introduction of the new law, been an experiment?—It has; and I think every

year's experience will tend to put it on a more satisfactory footing, for many medical men who set their faces against it at first now cordially accede to the arrangements of the guardians.

1747. Are the poor dissatisfied with the new mode?—Quite the contrary.

1750. Did parishes generally obtain medical attendance as cheap as they could?—I believe that governed them entirely. Nothing in the then state of the law prevented them from so doing; indeed, the old law took no notice of medical relief prior to the passing of the new Act. It had crept in by practice, but it formed no part of the law, though sanctioned by courts of justice.

1755. Were the medical men in the habit of reporting to any persons, with respect to the sick under their superintendence?—Generally speaking, they did no such thing.

1756. Are the weekly reports now compelled to be made, of great advantage?—Very great, and a very great security to the poor that they are properly attended. Those reports assist the guardians in determining what should be the nature and amount of relief.

1762. Have you had any experience upon the formation of self-supporting medical dispensaries, or medical clubs?—I have had some; whilst I was a director of the poor in Coventry, I perceived that medical relief was the door through which vast numbers of persons became paupers for other subsistence besides medical relief; and in conjunction with some gentlemen we established a self-supporting dispensary, upon which, for several years past, there have been 2800 free members, all among the poor, and after paying the expenses of it the two medical men who are employed have received 300*l.* a year for their services. Since the introduction of the new law we have established them in some instances, but not long enough to enable us to form a correct opinion as to their success, though I anticipate the greatest possible advantage from them, and I hope to see them established everywhere.

1764. Have you ever known in any union the medicines purchased by the guardians, who contract with the medical officer only for attendance?—Only in Nottingham, but it would be totally impossible to adopt it in agricultural districts, and even in a large town it may be much better left to the guardians; as regarded Nottingham, I found that plan existing before the union was formed, and therefore I did not interfere with it.

1769. Have you any general principle by which you are governed in recommending the extent of medical districts?—No; we have generally made the district in some degree subservient to the residence of the medical man whom we have presumed to be willing to contract; those medical men being now very much in charge of the same parishes.

1771. So that your arrangement has not generally interfered with the presumed practice of the medical men?—I do not mean to say that, because I think their districts are larger than they were before, and there might be two or three medical men resident in the district, and therefore it has interfered, but the districts have been made with reference to the residences of medical men.

1772. Are there instances in which the extent has been too large?—I am not aware of such a case, excepting that alterations have been necessary in practice, and, from time to time, made; as, for instance, in the Lincoln Union.

1774. Do you think it desirable to guard very cautiously against the poor being exposed to the inconvenience of going a great distance for medical relief?—Yes, I do; but I think it necessary also to guard against giving the medical man so little to do as not to give him sufficient motive properly to attend it; under the old system, a medical man often took a parish contract for 2*l.* or 3*l.*, when of course every private patient was better worth attending to than the parish paupers; whilst, under the new system, if a man has a district worth his attendance, every case in it operates upon the whole contract, so that in a contract of 50*l.*, every case of neglect would have a very much greater effect upon that contract than it would under the old system.

1775. Under the new system you think that medical districts should be of some extent?—The medical man should have as much as he can attend to properly; for, if the district be very small, and the number of paupers very few, there is a chance of those poor not being so well attended to as if the number were much greater. His private practice would be the most important part of his consideration.

1779. Do you think it probable that the guardians and medical men would enter into a mutual contract where the duties could not be efficiently performed?—Certainly not.

1811. Mr. WAKLEY. You stated that you thought the existing arrangements were the best; have you not several and various arrangements in the present system?—Yes, although not in my district.

1812. Would you select, as the best system, the contract, or the per-centage system, or the system of tender?—I should object decidedly to a constant recurrence to the tender system; but it is somewhat difficult at present to settle which is best, the per centage or the contract; the object of the Commissioners in allowing a difference in different parts of counties in the system of attendance, was ultimately to find out that which worked best.

1813. Supposing, after you had made a contract with a medical man, the guardians are desirous of altering it, or of dismissing the medical officer, what is the course of proceeding?—To state their desire to the Commissioners, with their reasons.

1814. Can a medical officer be dismissed by the guardians without an appeal to the Commissioners?—No; but the interests of the Commissioners and the guardians are one and the same, and the Commissioners would instantly accede to the dismissal, because I give the guardians credit for not wishing for the dismissal, except for some good reason.

1815. What are the usual conditions in the contract between the guardians and the medical officer?—To attend all sick paupers within the district, and to find all necessary medicines and appliances, in some instances with a few exceptions; generally trusses are an exception, for that is an article of manufacture; and I have generally advised guardians to except them from the contract, because I once saw a medical man placed in a very invidious situation, considering that he was bound to find everything. A man applied for a truss, and the guardians referred to the medical man, to be guided by his opinion; the medical man said that he did not require a truss, and the truss was of course refused; but it was directly imputed to the medical man that he refused the truss because he had to find it himself, and had an interest in refusing it; and as a truss is an article of manufacture which the guardians can purchase as well as the medical man, I have ever since advised that the truss should be an exception.

1816. The hernia being an object which is apparent to the senses, the guardians could determine whether the patient had that which necessity required?—No; I conceive they are guided by the medical man.

1817. But if it were not directed, the guardians could ascertain the neglect?—Yes.

1818. Suppose there was an epidemic in which expensive medicine was required, such as quinine, could the guardians determine whether the medical man had given a sufficient quantity to his patients?—No; and for that reason I have advised all boards of guardians not to put the care of the poor into the hands of any but respectable practitioners.

1819. If you can trust to his discretion and humanity in such a case, why not also in the case of the trusses?—Because one is an article of manufacture, which the guardians themselves could purchase and give out, whilst quinine they could not.

1820. Could they not purchase quinine with the same ease they could purchase trusses; and is not quinine a very expensive article of manufacture?—Yes; but I conceive that the administering a truss and administering quinine are different things.

1821 Because one is an external application and the other is an internal remedy; but in what does the difference consist?—It would be dangerous in the board of guardians to meddle with quinine, when it is not to meddle with trusses.

1822. Do you not think that it would be dangerous for the guardians to apply trusses where they were not needed?—They never apply them of themselves; they are guided by the opinion of the medical men; but I do not consider that there would be any injury in the guardians giving a man a truss.

1823. Mr. WALKER. You do not apprehend that a man is injured by having a truss found for him?—Not at all.

1824. Mr. WAKLEY. You say that the weekly returns which the medical men make to the guardians (*see Ques.* 1756) are a great protection to the poor. Who is there in the board who is capable of determining whether the requisite medicines have been supplied?—That must be left to the medical man.

1826. What protection then do the weekly returns furnish to the patients, other than showing that the medical man has been to see them?—The very circumstance of its showing when he saw them, how often he sees them, and his statement of the complaint itself, I consider is a great protection to the poor; and, besides that, in those returns he says that the man is better or worse, states his condition, and makes recommendations as to whether he requires meat, broth, wine, brandy, and other things; and then the guardians order it to be given.

1827. Then you do not recommend the system of tender?—I do not, except in the first instance, when we could not avoid it.

1828. And you would qualify your answer, with reference to when you could not avoid it, by the fact that the medical practitioners themselves had entered into a combination, and would not take charge of the parishes for the sum which you thought would be a fair remuneration?—The Commissioners' power over the guardians is not such as to tie them down in every case to adopt either the one course or the other: nevertheless, the Assistant-Commissioner, has considerable influence at the board, and I distinctly state that I would not advise the guardians to adopt the tender system after the first time, except in extreme cases; and if, on the first formation of the union, the sum hitherto given appeared to be moderate, I would divide the union into districts, according to the residences of the medical men, and give them an opportunity of taking that sum in such districts as the board thought right.

1829. Then, with reference to the per-case system, what rule would you lay down in adopting that?—It has never been adopted in any union under my charge.

1831. Supposing a contract to be made,

what rule would you observe in stipulating for the amount of salary; would you take into consideration the amount of pauper population merely, or of labouring population, or of disease that usually exists in the district?—I would take it with reference to the pauper population, the gross population, the area comprised in the union, and general health of the district.

1832. Supposing that there was no unusual circumstance to make a district unhealthy, what system of payment would you adopt, with reference to the conditions that I have stated?—It has been so difficult to adopt a regular rule, that the tender has been thus frequently resorted to.

1834. Then you have no statistical data to determine what course of payment should be recommended, your guide being the tenders which medical men themselves furnish?—Yes, but there are works upon that subject; I recollect paying great attention to the calculations of Dr. Yateman, at Frome, who has given a scale which in his opinion pays for attendance according to the gross population, upon which I acted, to a very great extent, on first going out; but the amount of pauperism differs so very much in the district in which I am now employed, that I do not think the scale so applicable there as it was in Berkshire and Oxfordshire.

1837. You took the advice of a physician when you first commenced; are you aware that they are not physicians who practise amongst the poor?—I am; but this physician had for a great number of years been a general practitioner.

1838. Under all the circumstances, you are disposed to think that medical relief is more liberally bestowed among the poor than any other kind of relief?—I am.

1839. Why?—The obtaining medical relief to a labouring man, independently of the parish, is a very serious matter to him, and therefore the guardians are more liberal to him in that respect; it is more difficult for him to provide against that calamity.

1840. Do you not think that it is because it is less costly than any other mode of relief?—No, I do not indeed.

(To be continued.)

LINCOLN UNION.—The following paragraph was forwarded to us for publication on Thursday last:—

The attention of the medical practitioners of Lincoln having been directed to the evidence of Mr. Gulson, as published in THE LANCET of the 24th inst., they are desirous of immediately declaring, that, with few exceptions, his statements relating to Lincoln Union are grossly incorrect, particularly as regards the existence of any combination; and this assertion they will be prepared to prove by documentary and other evidence before the Committee of the House of Commons.—Lincoln, Feb. 27, 1838.

THE LANCET.

London, Saturday, March 3rd, 1838.

THE Bill for the "Better Regulation of Medical Charities in Ireland" was, it will be recollected, abandoned last session by Lord MORPETH, the Irish Secretary. The *enfant trouvé*, now in the arms of Mr. FRENCH and Mr. Serj. BALL, will have the support of Ministers, while Ministers escape from any part of the responsibility that may prove troublesome. The former discussions, and the time that has since elapsed, led us to expect something better than the present undigested piece of legislation. The clause, however, that placed the *Irish Medical Charities* directly under the control of the *Poor-Law Commissioners* has been omitted; and this attempt to prostrate the medical institutions and the practitioners of Ireland at the feet of men unacquainted with the economy of the former, and ignorant of the qualifications of the latter, has failed.

The subjoined statement presents a general view of the nature and extent of the *Irish Medical Charities* to be regulated by the present Bill; it is derived from the work of Mr. DENIS PHELAN:—

	Number.	Annual Expenditure.
Dublin Hospitals (exclusive of several Lying-in Hospitals and Ophthalmic Institutions,	7	£28701
County and other Provincial Infirmaries	38	26426
Fever Hospitals, including three in Dublin	64	13606
Dispensaries	528	60000
District Lunatic Asylums	11	22965
	648	151699

Besides this sum, it is estimated that 10,000*l.* are expended on medical attendance in workhouses; and that 14,000*l.* are raised by subscription for dispensaries, not included in the preceding estimate.

The Irish Medical Charities have almost all been founded under legislative enactments, and differ from English institutions

of the same name, in their revenues being principally derived from Parliamentary or Treasury grants, and compulsory assessments. The amounts obtained from these several sources of revenue are nearly as follows:—

	Annual Sums.
Treasury grants to County Infirmaries,	£2653
Annual Parliamentary grants to the Dublin Hospitals	14374
County presentments	82839
Petit Sessions, and other fines	1742
Produce of property attached to several hospitals	23225
Subscriptions and donations	39078
TOTAL	£163911

The Medical Charities are the only parts of a system of Poor Laws which have been extended to Ireland; and it will be seen, that 82,839*l.*, paid out of the county rates, and presented by grand juries, is all that in Ireland can be set off against from six to seven millions in England, expended before the Poor-Law Amendment Bill was passed, for the relief of the poor.

In the Dublin hospitals, about 7114 in-patients are annually treated; in the thirty-eight county and other infirmaries, 9950; in the fever hospitals, not 15,000. The annual number of in-patients treated in the Irish hospitals, distributed over 32,000 square miles, amounts, therefore, to 32,000,—one-fourth more than the number said to be admitted into the London hospitals. The number of out-patients treated at the hospitals and dispensaries has not been ascertained.

This Bill proposes to place the control of the Irish Medical Charities in the hands of a Central Board of *seven* Medical Commissioners,—to carry on a system of inspection, and procure annual returns, by means of *five* inspectors, and an office in Dublin. The aggravated abuses, and the insufficiency of the present institutions, have been satisfactorily proved,* and it is highly probable that inspection, publicity, and a well-organised system of general regulation, will contribute to their reform. We have, therefore, *in the present state of medical law*, nothing to object to the principle, or to this part of the professed object, of the present Bill, although many of its clauses are drawn up in violation of the first elements of legislation, and the good is mixed with much deleterious matter.

The preamble restricts the Bill to Medical Charities "supported solely, or in part, by public funds," and thus, if fairly adhered to, would obviate some of the principal objections urged against the Bill of last year. Public inspection may extend, with advantage, over Medical Charities supported by the bequests, donations, or subscriptions, of private persons; and all the Medical Charities, indiscriminately, may be required to make annual returns, while their regulation is left unrestrictedly in the hands of the present possessors. Publicity is beneficial rather than injurious to charities honestly administered. But it will be seen that the present Bill does not restrict the powers of the Commission to inspection.

The second clause empowers the Lord Lieutenant to appoint *seven** experienced physicians or surgeons to be a Board of Control, for the regulation of all hospitals, asylums, dispensaries, or other Medical Charities, and to remove them at his pleasure; such *seven* Commissioners to perform the duties prescribed by the Bill: "Provided "always, that such Commissioners shall act "without any salary, fee, reward, or emo-"lument whatsoever!" On such cheap terms do Mr. FRENCH and Mr. Serjeant BALL expect to secure Medical Commissioners! They doubtlessly anticipate credit for a refinement on the system of tender. Ireland is poor, "but experienced physicians, or sur-"geons, well acquainted with the regula-"tion of hospitals," are plentiful. A clerk, or a Poor-Law Commissioner, is difficult to be procured, but *seven* Medical Commissioners can be readily found. So when INNOCENT XI. desired the Marquis DE ESTRES

* Poor Inquiry, Ireland. Appendix B.

* The words in italics are proposed to be inserted in Committee.

to furnish thirty thousand head of swine, he could not spare them, but thirty thousand lawyers he had at his service. Instead of "lawyers," the sagacious Irish Legislators would read "Medical Commissioners;" and make the Lord Lieutenant an offer not less modest and liberal.

The acts of unpaid Commissioners are in ill repute; such officers cannot be trusted; their conduct is too well known, from numerous, long, ruinous experiments. The upright man, who discharges the duties of a Commission conscientiously, neglects his profession, and sacrifices his private interests. The majority of unpaid Commissioners either neglect the duties of their office, and slumber at their post, denying all responsibility, and throwing the blame that arises on their colleagues, or they are diligent, and remunerate themselves indirectly, by jobs, by extortions, or by a convenient oversight of abuses. When some Eastern monarchs send governors to remote provinces, they find it convenient to pay no salaries; the office is honorary; but the governor is expected to sustain the lustre of his station, and levies treble the amount of a reasonable income on the inhabitants. Complaints lodged against an honorary governor are made in vain. A barber, without sequins, converted into the governor of a Turkish province, may give a faint idea of an unpaid, unfed, Irish Commissioner, suddenly set at liberty among the charities of his country. No man is more likely to apply the vulgar proverb, "Charity begins at home."

What private individual ever committed the management of his estates to unpaid Commissioners? Conceive the Duke of Devonshire, in a fit of economy, thus addressing seven lawyers and land-agents:—"Gentlemen, I do you the honour to place "all my estates, lands, tenements, farms, "messuages, monies, at your disposal; you "will appoint subordinate officers; sell and "purchase, take down and build up; discharging all the duties, and carrying out "all the improvements, suggested in this "paper: 'Provided always, that you act "'without any salary, fee, reward, or emo"'lument whatsoever.'" And suppose that his Grace added, "without knavery, gen"tlemen, or peculation of any kind!" If the parties addressed were honest men, would they not feel that even in the first part of the proposition they were offered a gross insult? But knavery is the inevitable result of such appointments, and every honest man would decline acting on such impracticable conditions. The unpaid agents would consider themselves licensed to abandon their duties, or to repay themselves by corrupt appointments. Now, if a private individual be too well aware of the consequences to entrust the management of his concerns to unpaid agents, why should Government abandon the medical charities—the scanty charities—set apart for the Irish poor, to seven unpaid Commissioners?

The operation of the 1st and 2nd Geo. IV. will, no doubt, be referred to on the present occasion, as this is evidently the source of the obnoxious provision in the present Bill. The 1st and 2nd Geo. IV. empowers the Lord Lieutenant to appoint a Board for superintending and directing the establishment and regulation of lunatic asylums; this General Board consisting of eight persons, acting without salary, fee, or reward. Ten lunatic asylums have been built since 1825, by the unpaid Commissioners; we have accounts of seven of them before us: the seven sites cost 12,765*l.*, the seven buildings 151,133*l.*; the furniture and other contingencies, 11,709*l.*; seven lunatic asylums, that lodged 880 lunatics, in 1833, cost Ireland *one hundred and seventy-five thousand six hundred and five pounds!* Upon house-room for one lunatic, the unpaid, irresponsible Commissioners expended nearly 200*l.*; the rent for one individual, at 5*l.* per cent., was 10*l.* a year in Ireland. The Commissioners sank 25,000*l.* on each asylum. After this decisive experiment, in which so large a sum of the public money has been thrown away, will Parliament confide the Medical Charities of Ireland to unpaid Commissioners? Has Ireland not found, to its cost,

that unpaid Commissioners are irresponsible, extravagant, jobbing spendthrifts?*

The Commissioners are empowered by the Bill—(1.) To inquire into the property and management of all Medical Charities which are supported, even in part, by public funds, or which have been established by private contributions, "for public purposes."—(2.) To enforce "conformity with the charters," or with "the wills of donors;" and also, notwithstanding the avowal in the preamble, "to make such "other laws and regulations, and appoint "such additional governors and directors, "or committees, for the government of every "such hospital, asylum, infirmary, dispensary, or other medical charity, and the "officers thereof, as the Commissioners may "deem necessary for the prevention of any "conflict between the objects and purposes "of any such institutions, and the objects "and purposes of any Act to be passed in "this Session of Parliament, or in any "future Session, for the relief of the poor "in Ireland."—(3.) To "rent or purchase "any houses, buildings, lands, tenements "or hereditaments, on the site, or sites, "on which it shall be proposed to erect hospitals, infirmaries, or dispensaries."—And (4.) "To employ, with the consent of the "Lord Lieutenant, such clerks and officers "as they may find necessary." Such is the extent of power, and such are the arduous duties, with which the Lord Lieutenant of Ireland is to invest a Board of unpaid, irresponsible Commissioners!

The 5th and 6th clauses give the Lord Lieutenant power to appoint FIVE physicians or surgeons to be inspectors of hospitals, infirmaries, asylums, dispensaries, and other medical charities; to remove them at his pleasure; and to allow them a salary "not exceeding to each the sum of 600*l.* "in the year, together with such allowance "for travelling, and expenses of office, as "shall be sanctioned by the Lord High "Treasurer, or Commissioners of the Treasury." The 10th clause enacts, that every hospital, asylum, or dispensary, "shall be "visited *twice*, at the least, in every year, "by *one* or more of the inspectors." The 8th clause entitles the inspectors to transact their business at the Medical Charity Office, and to employ the clerks and officers of the Commissioners "to assist them in examining, auditing, and arranging the accounts "transmitted to the Medical Charities Office "by the governors of the several institutions, and in preparing the report to be "laid before the Commissioners, and the "abstracts and summaries of returns, and "expenditure, to be laid before Parliament."

Looking at the whole machinery of the Medical Charities establishment, what, we ask, is there that calls for the services of *seven Commissioners?* In this country *three* Poor-Law Commissioners superintend all the Unions, and direct institutions that expend millions of pounds annually; while the Medical Charities of Ireland, which are scattered thinly over that island, are few in number, and do not now expend 200,000*l.* a year, are to be regulated by *seven Commissioners*. This is a tacit acknowledgement of the worthlessness and inefficiency of unpaid officers. Seven—strange that Mr. FRENCH and Mr. BALL did not say instinctively nine—are less efficient than one accountable, active Commissioner, dependant on his salary, and devoting all his time to the discharge of his duties.

The space that we can allot to the subject in the present Number of THE LANCET is now expended; but we shall next week advert to some other provisions of this measure, and examine, with minuteness, the proposed qualifications of the gentlemen who henceforth are to act as physicians and surgeons to the hospitals and dispensaries of Ireland. In this part of the Bill we distinctly discover the machinations and knavery of the incorporated monopolists of

* For some curious illustrations of the management of the Lunatic Asylums, see Poor Inquiry, Ireland, Appendix B, p. 5, and 413. The state of the Belfast Asylum deserves especial attention.

the English and Irish medical and surgical colleges. We know not what degree of success may attend their foul schemes, but of one thing they may be assured, namely, that their knavery shall not be practised without exposure, nor without raising in England a protest, on the part of the profession, against the adoption of so foul and pernicious a plan from being drawn into a precedent with respect to the medical institutions of *this* country.

MEDICAL STATISTICS.

HIGH MORTALITY OF FOUNDLINGS BROUGHT UP BY THE HAND, COMPARED WITH THE MORTALITY OF THOSE SUCKLED.

Number of foundlings at Parthenay, 153; died in one year, 54; deaths out of 100 born, 35.

Number of foundlings at X——, 244; died in one year, 197; deaths out of 100 born, 80.

Of 655 children received at X——, only 66 lived 12 years.

Struck with the enormous mortality at X——, the Abbé Gaillard ascertained that the children were equally well attended at the two places, but that at X—— the children were brought up by hand, instead of being suckled, as at Parthenay. The greater number of deaths at X—— took place in the first month after birth; and the mortality was at a maximum in autumn, a fact confirmed by many years observation at X——, and other establishments, where the children are not supplied with natural food:—

Months.	Births.	Deaths, 0—30 days.
December	17	7
January	16	5
February	28	3
March	23	9
April	20	6
May	18	7
June	18	3
July	18	10
August	30	26
September	7	4
October	29	22
November	20	14

From this table it appears that of 244 children brought to the hospice in five years, 116 died in the course of the first month=48 per cent.; that of 123 children born between January and June, 33 died in the first month; while 83 died out of 121, born between July and December. In the first months of the year the mortality was 27, in the last six months 67 per cent.; of 100 children born between January and June, 73 survived the first month; between July and December only 31 survived.

The mortality is raised by extreme cold; in November and December, 1829, out of 29 children admitted, 19 died in the first month after admission; in July and August of the same year 11 died in the first month out of 25 admitted.

These facts show very decidedly the evil consequences of denying infants their natural food, and furnish another argument against the fatal practices of those heartless mothers who abandon, or refuse to suckle their own offspring.—*From Recherches sur les Enfans trouvés, par M. L'Abbé Gaillard.*

HOSPITAL OF LA CHARITÉ.

LUXATION OF THE THIGH, DATING SEVEN MONTHS AND A HALF.—ATTEMPT AT REDUCTION.—FRACTURE OF THE BONE DURING THE OPERATION.

An opinion generally prevails amongst surgeons that no attempt should be made at reducing a luxated limb, when two or three months have elapsed, since the receipt of the accident. It is, however, certain, that luxations of a much more ancient date have been reduced, and pathological anatomy shows that in some cases of dislocation of long standing we may attempt reduction with considerable hope of success. Thus, for example, the head of the bone may have been forced through a simple laceration of the fibrous capsule; here, the articulating extremity of the bone, although displaced, is still connected with the capsule, which continues to secrete synovia, and does not become completely disorganised. The reduction of old luxations requires the employment of very considerable force, and accidents sometimes occur even when the mechanical means resorted to have been directed by skilful surgeons. An accident of this kind lately befel M. Malgaigne, at the *Hospital of La Charité.*

A lad, seventeen years of age, was admitted into the hospital with incomplete luxation of the thigh, upwards and outwards, which dated seven months and a half; the injured limb was not much deformed, but there existed a distance of half an inch between the head of the bone and the cotyloid cavity. For several days weights, gradually varying from 10 to 13, 24, and 45 kilog.*, were attached to the extremity of the injured limb, for the purpose of extending or breaking any cellular bands which might retain the head of the bone in its

* The kilogramme weighs about two pounds five grains.

abnormal position. Two-thirds of the distance between the head of the bone and its cavity had been thus accomplished, when more powerful means were had recourse to. A lever was firmly attached to the outer side of the thigh, and the extending force carried to an equivalent of 200 kilog., but afterwards reduced to 140; the head of the femur was now brought down on a level with the acetabulum, the extending force suspended, and two assistants having bent the leg on the thigh, were directed to rotate the latter from without inwards; during this manœuvre the femur was broken across at its lower third.—*French Lancet*, Feb. 3, 1838.

CHELTENHAM HOSPITAL.

NOTES OF CASES TREATED AND REPORTED

BY MR. EVES,

SURGEON TO THE HOSPITAL.

STRANGULATED FEMORAL HERNIA.

Case 1.—A female, ætat. 55, was seized, Feb. 8, 1837, with strangulated femoral hernia, about one o'clock, P.M. She had been suffering from influenza for the last three or four days, and had been bled on the seventh, at her own request, without my permission, a measure of which I strongly disapproved, having generally found it very injurious in that disease. She is very weak and depressed; frequent vomiting, constipation, abdominal tenderness, and pain, were present. Tried taxis, warm bath, and ice to the tumour, all failed; tumour was very tense, and unequal, so that it was thought to contain much omentum. Operation decided on in consultation with Mr. C. Fowler and Mr. Whitmore; performed at one o'clock, P.M., on the 9th. The sac, when opened, was found to contain a knuckle of intestine only.

℞ *Opium*, gr. i.;
Calomel, gr. iii.

10. No motion; colicky pains about the navel; no tenderness on pressure; tongue dry, and rather brown.

℞ *Decoction of bark, with carbonate of ammonia*;
Effervescing draught, with 3ij. *of brandy occasionally*;
Strong beef-tea; *porter*.

11. Bowels have acted three times, other symptoms as yesterday; spirits very much depressed.

12. Better.

14. Wound dressed; not healed; dark-coloured fœtid discharge. Apply solution of *chloride of lime*.

March 7. Wound nearly healed; general health quite recovered.

In this case a nutritious and strengthening regimen was adopted early in the after-treatment, which was of great importance, as the powers of the system were so much depressed by the combined effects of the influenza, bleeding, and the operation; under any other treatment it is most probable she would have sunk from exhaustion. I think the necessity of this early support is often overlooked in practice; the fear of inflammation causes us, in many cases, to be too liberal with our purgatives and antiphlogistics.

Case 2.—To illustrate another variety of after-treatment, which is a point of the greatest importance in surgical practice, I add the notes of another case of strangulated hernia.

A female, ætat. 53, admitted September 15, 1837, suffering for a long time from a pulmonary complaint, with bad cough. Unable to return the hernia at one o'clock, P.M., on 14th. Symptoms at present, three o'clock, P.M., 15th:—Sickness; pain and tenderness about the navel; constipation, furred tongue, &c. Tried taxis; applied ice for some time. Consultation with Mr. C. Fowler,—operation decided on; commenced at six, P.M. A small piece of intestine was found in the sac. A very great discharge of serum took place upon opening the sac. Stricture formed by Poupart's ligament exceedingly tense, so that a probe was, with great difficulty, introduced on the finger into the abdomen. At length I succeeded in introducing the hernia-knife flat upon my finger, rather towards the inner side of the neck of the sac; then, turning up the edge of the knife, the stricture was divided upwards. The intestine was returned with great ease.

Visit, nine, P.M. Pain about the navel present, but not so bad as before the operation; vomiting left her. *Morphiæ muriatis*, gr. ¼.

16. Pain about the navel still present, but not constant; no motion.

℞ *Castor-oil*, oz. ½;
Tincture of hyoscíamus, drachm ½;
Peppermint-water, oz. i., a draught.

Visit, evening. No motion; pain increased; tumid abdomen. Injection of oil of turpentine, castor-oil, and gruel.

℞ *Opium*, gr. i.;
Calomel, gr. iii.; pill every sixth hour.

17. Better; bowels have acted well.

18. Cough bad.

℞ *Mur. of morphia*, gr. i.;
Prussic acid, drops vi.;
Camphor mixture, oz. vi. One ounce thrice a day.

Oct. 1. Wound quite healed.

In cases where the patient is so debilitated as to preclude the use of the lancet and tobacco enema, the application of ice is the most useful of all means. I have found it

succeed several times, when the operation has appeared almost inevitable.

HYPERTROPHY OF THE CLITORIS AND NYMPHÆ, FORMING A LARGE TUMOUR.

A married female, ætat. 25, admitted September 9, 1837. Has had some venereal affection, I believe gonorrhœa. She traces the origin of the enlargement to a kick received four or five months back; it is painful and troublesome when she walks or sits; there is a profuse discharge from vagina.

11. I removed the enlarged parts, by holding them in the left hand, and dividing them at the base by one stroke of the knife. Three small vessels bled, but one only was tied, the others stopping by being seized and pressed between the forceps. I was sent for in three or four hours after, when I found that she had had profuse hæmorrhage, which was still continuing. Vomiting and considerable faintness were present. During examination clots were forced from the vagina, as in uterine hæmorrhage. Having cleared the parts, I discovered a bleeding vessel, to which I applied a ligature; as there was considerable oozing of blood, I sprinkled oxydum zinci over the wound, and applied pressure with compresses of lint.

The parts, some days after the operation, were much tumefied and painful, and there was considerable purulent discharge; the wound was treated with poultices, and afterwards with the *lotio plumbi*, taking care to prevent cohesion of the labia. The discharge continued after the parts were healed, which was removed by the cubebs.

The hæmorrhage in this case was very alarming, a circumstance which ought to be borne in mind by the surgeon, when about to operate in similar cases, especially as he may be misled by the experience of Denman, who says there is not much danger of hæmorrhage in operations on these parts, although in some cases, he adds, this is said to have been alarming and extremely difficult to manage; "but," he continues, "I have more than once seen both the enlarged nymphæ, and several excrescences of considerable size, growing upon them, removed by the knife at the same time, yet the surgeon has not been under the necessity of tying a single blood vessel." Soon after the occurrence of the case just related, I was called to assist a practitioner in this town, in stopping bleeding occurring after the removal of a portion of a very large warty excrescence of the labium. There is, therefore, great reason for care in tying every bleeding vessel, whether apparently necessary, or not, at the time of operating, as there is evidently so much fear of hæmorrhage.

TRAUMATIC TETANUS.

A man, ætat. 42, admitted as an outpatient January 11, 1838, with severe contusion, with abrasion of the skin on the back of the hand; poultice.

18. Sent for to him at one, P.M. Found him labouring under tetanus (trismus): whilst taking some tea on the evening of the 17th the trismus seized him; symptoms not very severe; jaw not very rigidly fixed, as he could occasionally separate the teeth a little; the muscles of the back were but slightly affected; drawing back the head in a very slight degree, he did not complain of much pain: his speech was sufficiently distinct; pulse 150, which, according to Dr. Parry, is very unfavourable. Sent him to the hospital.

℞ *Opium*, gr. i.;
Calomel, gr. iii. A pill every second hour.

℞ *Camphor*, scruple i.;
Spirit of turpentine, oz. ii.;
Barley decoction, oz. viii., for a clyster.

About 10, P.M. was sent for to hospital; when I arrived was informed that he had had a most violent spasmodic attack (opisthotonos); he had been bled by the attendants at the hospital before I arrived to ℥xx. The bleeding stopped this violent tetanic spasm, but it appeared to accomplish this by reducing the energy of the system. Pulse 180.

℞ *Camphor*, drachm i.;
White sugar and acacia powder, of each enough;
Tincture of opium, drachms ii.;
Spirit of sulphuric ether, oz. ½;
Water, oz. vi. Half an ounce every second hour, with the former pill.

He died at twelve at night.

A case occurred to me in private practice at the same time as the foregoing, which I shall take the liberty of noticing, and afterwards make a few general remarks on the subject of tetanus.

Jan. 15, 1838. Miss ——, ætat. 18, has been exposed to cold, thinly clad, became comatose in the evening, which state continued through the night; when she became sensible it was found that the lower jaw was completely fixed; pulse 90.

Rhubarb draught, with *aromatic spirit of ammonia*.

18. Jaw perfectly immoveable; spasmodic convulsions of the extremities, with occasional insensibility.

℞ *Aromatic spirit of ammonia*, drachms ii.;
Tincture of opium, drachm i.;
Compound spirit of sulphuric ether, drachms ii.;
Syrup of saffron, drachms ii.;
Camphor mixture, oz. vi. Take half an ounce every second or fourth hour.

20. Same state. Although her jaw is

quite fixed, she can suck in fluids through the teeth with some difficulty. Bowels have acted; she cannot take the mixture well, as the ether renders swallowing difficult.

℞ *Oil of turpentine*, oz. 1½;
Tinct. of opium, drops lx.;
Spirit of sulph. ether, drachm i.;
Decoct. of barley, oz. viii.; for enema.

21. As before.

℞ *Calomel*, gr. iii.;
Ginger, gr. i.; at night.

22. Bowels acted moderately; jaw still fixed; convulsive movements continue occasionally, although much milder.

℞ *Muriate of morphia*, 1 grain, at bedtime;
Draught with comp. decoct. of aloes and jalap, ½ oz., in the morning.

23. As before.

℞ *Calomel*, gr. v.;
Ginger, gr. ii.; a pill;
Saline draught with senna, in the morning.

24. Medicine has not acted; same state; jaw fixed; *menses appeared*.

25. Better; bowels acted well; jaw fixed; convulsive movements much diminished.

℞ *Camphor in powder*, gr. vi.;
Muriate of morphia, gr. ½. A pill in the evening.

26. Better; convulsive motions very nearly gone, but jaw perfectly fixed. This evening sparks of electricity were applied to the parts about the throat and neck for about a quarter of an hour, during which application she became able to open her mouth.

Opening draught in the morning.

29. Better in every respect, but perfectly unable to raise herself from the recumbent posture, and has somewhat of the globus hystericus.

Decoct. of bark; assafœtida pill.

She has been throughout the attack supplied with small quantities of strong beef-tea, wine, &c., &c. She could always articulate pretty well when sensible.

Feb. 1. Nearly convalescent; strength returning.

Remarks.—Although nosological arrangements may be of considerable service in the study of medicine, still, when we come to actual practice, a blind adherence to them will very much retard our progress in the acquisition of practical information. The true science of diagnosis is not so much to discriminate between the different groups of symptoms which nosologists term *diseases*, as to endeavour to trace out the pathological state producing the symptoms of any disease under treatment. Now, the latter case which I have noticed, is of that mixed nature which has been termed "hysteria tetanica." Perhaps the first link in the chain of diseased action was irritation of the uterus continued onwards to the medulla spinalis, and from thence to the brain. The symptoms of hysteria gave way quickly upon the appearance of the menses, leaving a local affection of the nerves, which electricity removed. It is worthy of remark in both these cases, that articulation was tolerably distinct.

At a coroner's inquest which took place in this town some months back, and which excited great interest, from peculiar circumstances of a local nature, the evidence of a very learned physician was attempted to be depreciated by some of the jury, because he asserted the same fact with reference to the case then under consideration. Fluids could likewise be swallowed, although the teeth were perfectly closed.

As regards the pathology of tetanus, we are completely ignorant of the subject; all we know is, that it is an affection, of some kind, of the medulla spinalis. That organ is, perhaps, generally affected secondarily, as we know it to be in traumatic tetanus, and as I infer it was in the second case which I have related. But if the pathology is obscure, much more is the treatment doubtful and undecided, the most opposite extremes have been followed, as bleeding and prussic acid on the one hand, and the strongest possible stimulants on the other. As it regards bleeding, it appears to me, in the generality of cases, perfectly inadmissible; it may conquer the convulsive spasms, but at the same time it will overcome the powers of life. I consider tetanus to be an analogous affection to delirium tremens; in each there is the traumatic and idiopathic affection; the difference is, that one, *delirium tremens*, affects the brain, while the other, *tetanus*, affects the medulla spinalis. Now, no practitioner thinks of using depressing remedies in the former disease. Why, then, should they be used in the latter? The remedies for delirium tremens, viz., wine, and other stimulants, with opium, are, then, I contend, the proper means of cure in tetanus. I know that this is no new doctrine, but it appears to me to have been somewhat forgotten, in the present rage for innovation and pretended improvement. Darwin advocates the use of wine to the amount of from a quart to three pints daily. Dr. Hosach relates a successful case, in which three gallons of Madeira were taken in a few days; and Dr. Dillon, of this town, informs me, that Madeira given very freely has been successfully used in several cases by Dr. Home, of Edinburgh. Opium in large doses, and turpentine injections, may be employed as useful auxiliaries.

Augustus Eves.

CASE OF

LARYNGITIS COMPLICATED WITH BRONCHOCELE,

IN WHICH THE EXTERNAL APPLICATION OF CROTON OIL WAS SUCCESSFULLY EMPLOYED.

By A. CAMPBELL, *M.D.*

THE successful use of croton oil, as an external application in laryngitis, is well known, and the value of that remedy, in the disease, duly acknowledged in Europe. The following case is worthy of notice as confirming the results already obtained:—

March 26, 1834. A table attendant, aged 19, strong and healthy, complains of considerable pain in the region of the larynx, with a feeling of extreme tightness, and incessant desire to cough. The voice is weak, unmodulated, and disagreeably hoarse on attempting to speak; he finds it difficult to produce vocal sounds, but after expiring forcibly, the voice is elicited. There is no fever, or quickening of the pulse. No pain in the thorax, nor are the bronchi affected. Five days ago, he first observed the commencement of the above symptoms, which have continued to increase until now, when he is nearly aphonic, and much distressed by the constant necessity to cough. There is no pain or fever on firm pressure of the larynx, nor is there any appearance of inflammation in the pharynx; there exists a distinct enlargement of the thyroid gland; the swellings are soft, elastic and fleshy, each the size of a small apricot; has not previously been affected with goitre, and was not aware of the presence of that disease when he applied for relief. He attributes the laryngitis to exposure during the night, as he was at the time of attack accustomed to sleep in the open air. The following mixture was directed to be made, and rubbed on the throat for half an hour twice a day:—

℞ *Croton oil*, ʒi.;
Olive oil, ʒij.—M.

The throat to be covered with a flannel bandage.

March 28. A crop of pustules has appeared on the neck; pain of larynx diminished; hoarseness continues.

The croton oil frictions to be continued.

April 1. The external larynx raw and ulcerated, voice restored to its natural tone; pain gone; goitre remains; discontinue medicine.

15. Integuments of throat healed, and goitre completely disappeared.—*Trans. of Med. and Phys. Society of Calcutta*, Vol. viii., Part 1.

The interest of this case consists in the manner in which the goitre was affected by the croton oil. During the removal of the disease in the larynx, the goitre was apparently unaffected; but at the expiration of fifteen days, from the cure of the laryngitis, and from the suspension of medical treatment, the enlargement of the thyroid gland entirely disappeared.

Should future trials with croton oil prove that it is efficacious in removing goitre, the result will be one of great importance, as the enormous expense of iodine renders its general use (in countries where goitre prevails to a great extent), quite out of the question.

MEDICINE AND SURGERY IN SPAIN.

To the Editor of THE LANCET.

SIR:—My attention was directed by a medical friend to a letter in THE LANCET of the 3rd of February, subscribed "WM. LAMBTON, late Surgeon unattached B.A.L.," and purporting to be a stricture on the state of medicine and surgery in Spain. Although not a member of the medical profession, I can appreciate, and must necessarily have the highest respect for, the attainments of the medical professors of England and France, and consequent regret that the professors of my own unfortunate country have not yet arrived at an equal degree of perfection. Still the "amor patriæ" induces me to hope that they are not quite plunged into such an abyss of medical and surgical ignorance as Mr. Lambton would fain persuade your readers is the case.

My troubling you with this letter results from an accidental rencontre with a medical officer of the late British Legion; and from inquiries which I very naturally made I had a further illustration of your English proverb, that "he who lives in a glass house, should not throw stones." From that gentleman I learned that had a Spanish surgeon taken some of your English surgeons in the Legion as a fair specimen of British practitioners, and published their acts and doings while attached to the Legion, he (the Spanish surgeon) might, perhaps, have been as happy in his selection as Mr. Lambton appears to have been in the two cases which he has detailed. * * * *

Trusting that the occasion will be taken as my excuse for thus intruding on your columns, I beg to subscribe myself, with much respect, your obedient servant,

A SPANIARD.

London, Feb. 10, 1838.

*** The conclusion of this letter we cannot publish on anonymous authority.—ED. L.

ADVERTISEMENT FOR A QUACK.

(*From a Correspondent.*)

The following advertisement appeared in a recent number of the *Leeds Mercury*:—

"TO BONE-SETTERS.—Some benevolent persons, regretting the almost daily occurrence of alarming accidents in this neighbourhood, hope, through this advertisement, to induce a clever BONE-SETTER to practise amongst them with every possible chance of success.—Further particulars may be had of Messrs. Robert Sunter, Thomas Edgar, and James Harker, victuallers.

"Grassington in Craven, 12th Jan. 1837."

Any person who is unacquainted with Grassington, might suppose that place to be destitute of medical assistance; yet two *regular* practitioners reside there, both of them fully competent (one of them especially, from being young) to attend to any "bone-setting" that may be required in that part. Some few years ago a neighbouring village possessed a "bone-setter," a low, ignorant brute, who, after doing incalculable mischief in his "profession," left the district in debt, and took the benefit of the Insolvent Act. With such an example before them, one would have thought the inhabitants of Grassington had had enough of "bone-setters." The worthy Grassington folks want a *mind*-setter more than a *bone*-setter,—a good schoolmaster among them. If the "benevolent persons" mentioned in the advertisement would set on foot a Lancastrian school, they would effect some real benefit on the neighbourhood, instead of ignorantly encouraging quackery and rascality. The referees in the advertisement are three respectable innkeepers, and I must express my regret that they should allow themselves to be made the tools of the "benevolent" blockheads who concocted the precious paragraph in the *Leeds Mercury*.

English Physicians in France.—Five English medical practitioners, Drs. Allatt, Scott, Carter, Shuter, and Galbraith, were, on the 21st of February last, put on trial at Boulogne, by the Procureur du Roi, charged with exercising their profession in France without authorisation from the authorities of that country. The case against Dr. Allatt was, at the defendant's request, postponed for eight days. Three French doctors, and two English (Drs. Robertson and Campbell), were examined for the prosecution, to prove having met the defendants in various consultations; and three French chemists testified that they had made up medicines from the prescriptions of the defendants, who were afterwards questioned by the Court as to their age, place of birth, titles, and qualifications, and length of practice in France. Monsieur Hedouin is said to have ably defended the parties, and the Court postponed passing judgment until after the trial of Dr. Allatt. The proceedings are viewed with great interest in Boulogne, and a sympathetic public meeting on the subject was held on the 22d ult.

Poisoning.—At a late meeting of the *Anatomical Society* of Paris, M. Prestat exhibited the digestive canal of a man who died in consequence of having swallowed half an ounce of concentrated sulphuric acid. The tongue and pharynx were free from alteration. The whole mucous membrane of the œsophagus was black, and detached from the muscular coat. Several large eschars existed in the stomach, and a few smaller ones were detected near the commencement of the intestinal canal. The man had lived eight days.

TO CORRESPONDENTS.

One of the jury at the inquest held on Louis Delamare, alluded to in our last number, has written to assure us that the expressions attributed to the coroner and jury upon that occasion, were "a mere invention of the newspaper reporter." We are glad to learn this.

We have been compelled to defer the publication of *Mr. Hedding's* paper until next week.

The letter of *Dr. Moran* has been left for him with our publisher.

Communications and letters have been received from *Messrs. Judd, David Oliver, A. Turnbull, Samuel Mitchell, Charles Coathupe, J. J. Kelso, W. Tomkins, S. Stanley,* and *Thomas Weatherill.*

A Practitioner of the Olden Time has omitted to state in what *Union* Mr. H——s officiates. Such facts connected with the contract as can be clearly ascertained, should be laid before the Parliamentary Committee by some witness who is competent to give evidence on the whole of the arrangements in that Union. The information supplied by our correspondent is not sufficiently definite. The non-qualification is at present only presumed.

(*From a Correspondent.*)—The inhabitants of the borough of Newbury have presented to John Alexander, Esq., a medical practitioner, resident in that town, a splendid candelabrum, emblazoned with the borough arms, "in testimony and approbation of his zealous and impartial conduct as Chief Magistrate, during an extended mayoralty of three successive years, 1837."